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TELEGRAPHIC ADDRESS—LANCET WESTRAND LONDON TELEPHONE NUMBER—GERRARD 5356

No. XXV. OF VOL. II., 1919.
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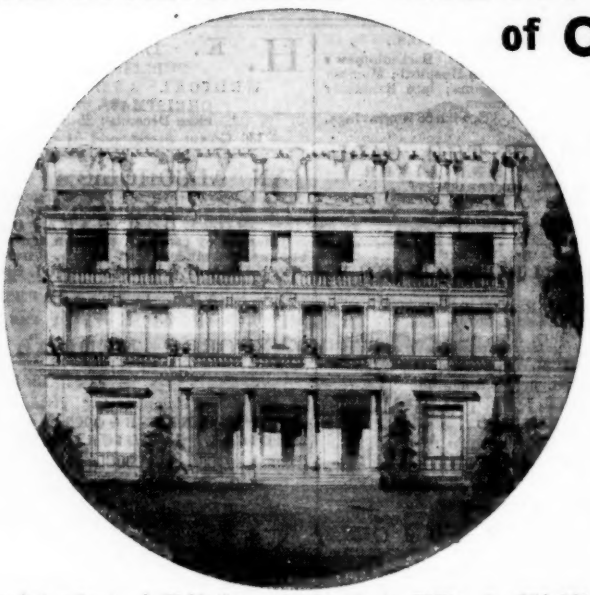

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Reflections
ON
THE EVOLUTION OF DISEASE.[1]

BY SIR W. ARBUTHNOT LANE, BART., M.S., F.R.C.S.,
CONSULTING SURGEON, GUY'S HOSPITAL, ETC.

GENTLEMEN,—Progress in medicine can only be made by acquiring the knowledge of the causation of disease, and the object of this communication is to demonstrate the extreme importance of studying at their commencement, and not at their finish, the changes in the human body which, when fully developed, we call diseases. It is only by recognising the factors underlying these abnormal conditions that we can hope to avoid trouble in the future or to deal with it should it arise on definite scientific principles.

It is now nearly 20 years since I realised that a large proportion of the evils flesh is heir to, which we call diseases, is due, directly or indirectly, to an abnormal delay in the passage of food materials through the gastro-intestinal tract and to the changes that result from this stagnation. In my earlier writings on this subject I employed as a title the term "Chronic Constipation," since it appealed to all ranks of the profession, and particularly because it indicates the primary causal factor in the whole sequence of stasis and its results. At a later date I replaced the title "Chronic Constipation" by "Chronic Intestinal Stasis," as it comprises not only the initial constipation, but also all the changes in the gastro-intestinal tract which follow on it. This term "Chronic Intestinal Stasis" has been accepted by the profession, and the term would appear to comprehend the various changes.

The reception which my views received in the first instance was hostile in the extreme. This was largely due to the fact that medicine has to a great extent been regarded a compilation of conditions or symptoms classified as diseases, and any attempt to regard many of them as interdependent or capable of being produced by a common cause was regarded as heresy of the worst type. My explanation of the causation of a large number of diseases was regarded as being so simple and obvious as to be absurd. Still, in obedience to the general law that action and reaction are equal and opposite, the pendulum of public opinion has steadily swung in the reverse direction in the intervening years and the intense opposition which my views originally evoked has been replaced by the interest and appreciation of the best minds in our profession. The pendulum still continues to swing in the same direction, and medical men generally are obtaining a more thorough grasp of the principles involved and are being influenced by them more and more in their practice.

Before considering chronic intestinal stasis in detail I would point out how I came to be familiar with the condition and to realise how great a part it played in the production of disease. Having succeeded in impressing on the profession the importance of dealing scientifically with fractures of the bony skeleton I turned my attention to the mechanics of the abdomen and of the contained viscera, with the view to applying to them the same principles that I had employed in the case of the skeleton, its ligaments and muscles. With the knowledge of these mechanical principles and of the structure of the gastro-intestinal tract it was quite easy to deduce the changes that ensue when the mechanical relationship of the viscera to their surrounding is altered.

Deviations from the normal in the mechanical relationship of the viscera depend on two factors. The first is a stagnation of the contents which commences in the end of the large bowel and which gradually extends up along its length. The second is the strain exerted upon the supports of the loaded viscera by the prolonged assumption of the erect position of the trunk during the waking hours.

The Gastro-intestinal Tract as a Drainage Scheme.

Let us regard the gastro-intestinal tract as a drainage scheme and observe its arrangement, its variations, and its points of weakness. At the lower end of the œsophagus, at the pylorus, and at the junction of the pelvic colon and rectum there are sphincters which vary considerably in development. There are others in the second part of the duodenum, in the end of the ileum, and in the transverse colon which are not less important. These have been fully described by Arthur Keith. The duodenum varies in form in different subjects. In a considerable proportion it ends vertically, while in another group the terminal limb is shorter and crosses the column transversely. It is at once obvious that, while the former arrangement is exposed to the disadvantage that any pull exerted upon the jejunum tends to angulate the duodeno-jejunal junction and consequently to obstruct its lumen, this disability is avoided in the latter variety. Again, it is clear that the angulation referred to as occurring in the first variety varies directly with the degree of intra-abdominal tension, so that the greater the tension the more readily is the duodenal effluent controlled by any drag upon the jejunum. It is at this point of the intestinal tract that obstruction most readily ensues.

The influence of tension on the hollow viscera is demonstrated in a most striking manner in the immediate relief to the obstruction of the intestines, the cause of death in acute suppurative peritonitis, which follows the relief of that tension by allowing the muscle edges along the longest possible median incision to gape as widely as possible, the skin edges alone being sutured together. By these means the area of the abdominal wall is greatly increased and a large number of lives are saved which would inevitably have been lost if the muscle edges had been approximated. The intra-abdominal tension is more variable in women than in men because of the relaxation of the abdominal walls which follows on pregnancy. The duodenum is so placed that, while the first portion is surrounded by peritoneum, in the rest of its length it receives only a very partial serous covering, and is sheltered and supported by other viscera and attachments. Consequently any abnormal increase in the tension of the duodenal contents throws an excessive strain upon the wall of its first and least supported portion. Any obstruction at the duodeno-jejunal junction would necessarily cause a distension of the duodenum, since the sphincter action of the pylorus resists the backward flow of the chyme into the stomach, while it permits of the continued passage of the gastric contents into it

[1] Substance of addresses delivered before the Ulster Medical Society and the West Kent Medico-Chirurgical Society.

Long-standing obstruction of the duodeno-jejunal junction results in a spastic condition of the pylorus. This involves two consequences. One is that the forcible impact of the food in its endeavour to pass through the obstructed orifice tends to produce changes in the mucous membrane about this aperture. The other is the consequent accumulation of material in the stomach resulting in its dilatation and in the hypertrophy of its walls. The stomach is supported at two fixed points, on the left by the œsophagus, and on the right by the margin of the gastro-hepatic omentum. As material accumulates in the stomach, so an increasing strain is exerted upon the mucous membrane covering the centre of its lesser curvature.

In proportion as the stomach dilates so does its capacity to drive its contents into the duodenum diminish. Consequent on this loss of thrust such changes as result from forcible distension of the duodenum tend to subside or disappear. Any interference with the free evacuation of the contents of the stomach tends in certain cases to set up a spasm of the muscle controlling the lower end of the œsophagus producing a condition to which the term "cardiospasm" has been applied. The vertical portions of the large bowel depend for support chiefly on the layer of peritoneum which extends from their outer surface to the adjacent abdominal wall. The cæcum possesses also an internal ligament, formed by the end of the mesentery and the terminal coil of the ileum. The transverse colon is retained in position by its mesentery, the support afforded by the great omentum being but slight. Any prolapse of the transverse colon of necessity angulates the hepatic and splenic flexures, and tends to obstruct their lumen.

Abnormal strain exerted on the layer of mesentery which is chiefly responsible for the support of any portion of the intestine results in a crystallisation of lines of force exactly as it does in the case of the skeleton. As the result of abnormal strain upon a peritoneal band such crystallisation is represented in the first instance by the formation of white streaks upon its surface running in the direction the lines of resistance. They gradually become thicker and more extensive in area, and later form a distinct membrane, which in its fully developed condition is attached by one extremity to the base of the mesentery or to the abdominal wall in its immediate vicinity, and by the other to the surface of the bowel. The attachment to the bowel extends progressively around its wall till it finally reaches the part opposite to its mesenteric attachment. As this membrane develops it contracts and shortens. While its attachment is confined to the mesentery it anchors and angulates the bowel, especially when the erect posture is assumed. As it encroaches on the circumference of the bowel, besides angulating it it also rotates the gut to which it is secured around its long axis, and still further reduces its lumen.

Early and Late Effects of Acquired Bands on the Lumen of the Intestine.

From a study of the attachments of the acquired bands which develop in the peritoneum where excessive strain is experienced it is seen that these evolutionary structures tend at first to support the weight of the bowel, and in so doing serve a beneficent purpose. Later they obstruct the lumen of the intestine first by angulating it and then by twisting it, and in so doing they exert a very prejudicial effect on it and on the welfare of the individual.

From an examination of the gastro-intestinal tract it is obvious that any stagnation of the intestinal contents produces an accumulation of solid material in the pelvic colon. It distends this segment and exerts a strain on the under surface of the mesentery, which secures the termination of the iliac colon to the iliac fossa in a degree proportionate to the distension of the progressively elongated pelvic colon. The strain results in the crystallisation of the lines of force in this situation and an acquired membrane is developed. This at first shortens the mesentery and angulates the bowel. Later as it continues to become attached to the circumference of the bowel it twists it on its long axis, and reduces its lumen still further, so obstructing the passage of material through it. It also not infrequently grips the ovary and Fallopian tube, dragging them out of their normal position, and interfering with their functions. Later it may completely surround the ovary which becomes cystic. The ovary as it increases in size forms for itself a peritoneal covering, and escapes from its enclosing capsule, leaving a cavity in the acquired membrane which rapidly diminishes in size. To this evolutionary structure I gave the name of the "First and last kink," "the first" because it is the earliest to develop and "the last" because it is the lowest in the drainage scheme.

At first this very important band appears to serve a useful purpose by preventing the extension of solid material into the iliac colon. When it develops sufficiently it obstructs the passage of material from the iliac into the pelvic colon, and causes fæcal matter to accumulate in the whole of the large bowel. The stagnation of the colonic contents determines the crystallisation of lines of force or resistance along the whole length of the overloaded large bowel, and these are especially developed at the points of greatest strain. The iliac and descending segments are fixed by bands which appear on the layer of peritoneum which extends from the bowel to the adjacent abdominal wall. At the splenic flexure this acquired structure is very highly developed, and by its contraction it drags up and angulates the flexure. Besides kinking the bowel a considerable twist may be exerted on the bowel in the manner already described, forming an obstacle to the passage of material through the splenic flexure, so still further damming back and delaying the contents of the proximal colon. The loaded transverse colon drops in the erect posture, its extremities approximating to the ascending and descending portions of the large bowel. Evolutionary bands form between the adjacent surfaces of the transverse colon and the vertical portions of the big bowel, and by these much of the weight of the transverse colon is transmitted to the abdominal wall through the ascending and descending segments of the colon and through their original and acquired attachments.

An additional evolutionary support for the transverse colon is formed by a band which extends from the lesser omentum and the under surface of the liver and gall-bladder, and is attached below to the transverse colon. It is also secured to the first part of the duodenum and pylorus, and helps to support the stomach. It produces a definite kink in the colon at its point of attachment, especially when the erect posture is assumed, and this angulation may develop later into a definite obstruction. The acquired bands which secure and raise the hepatic flexure are much less developed than those about the splenic flexure; consequently, they exert but little influence on the calibre of the bowel at this

point. The acquired membrane which helps to support the ascending colon is similar to that on the left side, but it is liable to be more irregularly developed, so that an especially firm band occasionally constricts the ascending colon about the level of the iliac crest. Delay of the accumulated stagnating contents in the cæcum produces important and far-reaching results.

The cæcum is supported externally by the reflection of peritoneum, which extends from its outer surface to the abdominal wall, while internally it is held up by the termination of the ileum with its mesentery. As the cæcum distends it tends to descend into and occupy the true pelvis. The tension of the accumulated stagnating cæcal contents affords an obstacle to the passage of material from the ileum into the cæcum, and if the ileo-cæcal sphincter is inefficient it may even permit of the regurgitation of its germ-laden contents into the ileum.

Again, as Dr. Jordan has so clearly demonstrated, the prolapse of the distended cæcum not infrequently results in its axial rotation, with angulation of the terminal small intestine and in obstruction to the ileal effluent. Therefore it is of great importance that the cæcum should not be allowed to descend from its normal position. What are the efforts which the organism makes to obviate or control this prolapse? On the outer side as through the whole large intestine the lines of resistance are crystallised to form bands which progressively grip the surface of the cæcum. Later, when fully developed, they form a very distinct membrane. The strain thrown upon its internal support is experienced by the inferior surface of the mesentery, and in precisely the same way as the bands already described a new and very important membrane originates in this situation. At first it involves the surface of the mesentery, shortening it as it develops and contracts, and so angulates the ileum, especially when the erect posture is assumed. Later it becomes progressively attached to the surface of the bowel, till it finally reaches that portion which is opposite to its mesenteric attachment, and by its gradual contraction it twists the ileum on its long axis and still further reduces its lumen.

Rôle of the Appendix.

The mechanics of this portion of the large bowel are seriously complicated by the presence of the appendix, which may play a very important rôle. Since it is a structure of considerable strength, it is liable to be secured by one of the bands or crystallisations of lines of resistance in the same manner that they grip the surface of the bowel. If one of the acquired outer ligaments of the cæcum seizes it the appendix forms an additional external ligament which helps to hold up the cæcum. As a ligament it is very efficient, but being hollow and lined by a secreting mucous membrane any obstruction of its lumen consequent on its being anchored in the manner described may result in the accumulation of its secretions and in the development of inflammatory changes varying in severity.

Much depends on the mode of attachment of the appendix, as to whether it is secured by its extremity or whether it has been abruptly angulated by being anchored at some point in its length. Or the obstruction which results from the strain exerted on it may be felt at its junction with the cæcum. On the other hand, the appendix may be secured so that it forms an additional support to the internal lateral ligament of the cæcum. In this position besides being liable to the several inflammatory changes consequent on its fixation, it is always attached to the posterior surface of the mesentery, where it may be blended with the membrane which produces the ileal kink.

When the appendix forms a portion of the internal ligament of the cæcum it sooner or later exerts a controlling influence on the ileal effluent, since lying behind the end of the ileum and becoming progressively more tense owing to the contraction of the acquired bands which secure it, it forms a hook on which the ileum hangs and is obstructed especially in the erect posture. I gave the name of "controlling appendix" to this mechanical relationship of the appendix to the ileum. It is difficult to exaggerate the harm that may be done by the fixation of the appendix in this situation or the importance of recognising it. Fortunately as the anchored appendix often becomes inflamed, the disability which it produces does not escape the attention of the surgeon with the same frequency that the ileal kink does, though he often fails to realise the harm it has done, being unaware of the deleterious influence it exerts upon the lumen of the bowel.

Inflammation of the appendix from infection of its contents and obstruction of its lumen may take place, but with much less frequency, without any anchoring, since infection may extend to it from the cæcum.

Mechanical Effects of Stagnation at Points of Obstruction.

The following are the mechanical effects which are exerted by the accumulated stagnating contents of the bowel at the points of obstruction produced by muscular spasm or by the development of controlling membranes.

1. The impact of hard fæcal matter on the mucous membrane covering the sphincter muscle which controls the end of the pelvic colon is liable to produce ulceration or cancer in this situation.

2. Excessive elongation of the pelvic colon may result in a torsion of the loop and the formation of a chronic volvulus. This arrangement permits of the entrance of material into the loop, but opposes its passage from it. The twist may at any time become so complete as to produce acute obstruction.

3. The obstruction to the passage of hard fæces, which is brought about by the last kink, may determine the development of cancer in this situation. Or the habitual over-distension of the bowel infiltrated with fat proximal to the obstruction may result in the development of diverticula, which may later become infected by inflammatory organisms or by cancer.

4. Similarly the obstruction at the splenic flexure may result in the formation of infective or cancerous ulcers.

5. The obstruction afforded by the acquired ligament which develops between the under surface of the liver, the gall-bladder, the pylorus, duodenum, and transverse colon may produce ulceration at the seat of obstruction. As one would expect, this is not an uncommon site of cancer.

6. The same may occur from the control exerted by an acquired band on the ascending colon.

7. The obstruction at the duodeno-jejunal junction may produce an elongation and dilatation of the duodenum, most marked in its first portion, with congestion, abrasion, ulceration, and, later, perforation of the mucous membrane lining this part of the bowel.

8. Spasm of the pylorus, which is associated with the duodenal distension, forms an obstacle to the passage of material through the pylorus, which may produce changes in the mucous membrane about it, varying in degree between congestion and cancer.

9. In consequence of the obstruction to the gastric effluent by the spasmodic action of the pylorus material

accumulates in the stomach and exerts on the mucous membrane of the lesser curvature a tearing strain which produces changes in it varying between congestion and carcinoma. It would appear that as long as the secretion of the stomach continues to be normally acid the organisms or other materials which produce cancer are unable to obtain a secure foothold. This, however, may take place when the acidity becomes distinctly subnormal in amount.

10. Any interference with the gastric effluent may cause an irregular spasmodic contraction of the œsophageal sphincter, commonly called cardiospasm. This obstruction to the free passage of material through the œsophagus is liable to produce changes in the mucous membrane, which may later become cancerous.

The Infection of the Chyme by Organisms.

Having dealt with the mechanical aspect of chronic intestinal stasis, we will pass on to study the changes that result from the infection of the stagnating contents of the small intestine with organisms. I need not remind you that Carrel has demonstrated that the several tissues of the body can grow and live indefinitely, provided they receive nutriment and are efficiently drained. Any interference with the drainage of their effete products causes the death of the tissue.

The excessive stagnation of material in the large intestine appears to exert only a mechanical effect. At a later period virulent infective organisms may thrive in the contents of the large bowel and inflammatory changes of varying severity may ensue. These infections usually occur at an advanced stage of intestinal stasis and are secondary processes similar to secondary infections in other parts of the body.

The bacterial infection of the chyme which takes place in stasis alters the relationship of every tissue in the body to its food-supply as well as to the elimination of the products of tissue change. In static cases Dr. Mutch has demonstrated from specimens obtained from the contents at different levels of the small intestine during operations for colectomy, &c., that streptococci and *B. coli*, as well as other organisms, abound in the chyme, varying in degree and level with the extent of the stasis. He shows very clearly that while local delay is the primary factor in favouring the growth of organisms in the intestine, deficient assimilation of food, and especially of carbohydrates, in the upper part of the gastro-intestinal tract is the second essential factor.

Changes in the Liver and Pancreas.

In stasis the liver cells are exposed to attack from three distinct sources. They have to deal with material, either toxins or organisms, carried to them through the radicals of the portal vein, having been absorbed from a tract which has ceased to be sterile and whose contents may contain a large number of very virulent organisms. They are also surrounded by a fine network of ducts whose contents are liable to become infected by the extension of organisms along the common bile-duct. Again, the liver cells are nourished through the portal artery by blood laden with toxic material which the liver cells have failed to eliminate or convert. In the earlier stages of stasis the liver appears to be abnormally large, while later it is distinctly smaller than it should be. Just as every change, which the skeleton of the labourer undergoes in order to accommodate itself to its surroundings, tends to shorten the life of the individual, so do all the changes in association with and dependent on those in the gastro-intestinal tract tend to shorten life. Such changes in the organs are classified as diseases. It is obvious that the liver must develop many and various conditions in consequence of its changed relationship to the food-supply of the body. The extension of organisms to the gall-bladder may result in the formation of gall-stones and in the development of the several complications which they produce, or it may cause inflammation of the gall-bladder of varying degrees of intensity.

The pancreas undergoes very definite changes in advanced cases of stasis. It becomes hard and nobbly in parts or throughout. These changes are probably chiefly inflammatory in origin and due to extension of infection from the duodenum along the pancreatic duct. Later carcinoma may develop in the damaged structure of this organ. The same infective process may set up an acute inflammation of the pancreas. The invading organisms may also serve as a nidus for the formation of calculi which may bring about serious complications by their presence. Dr. Mutch and Dr. Jordan have both demonstrated that advanced conditions of chronic intestinal stasis are often present in diabetes mellitus. The liver and pancreas have, beside sharing in the general depreciation due to being supplied with impure blood, the disadvantage of being directly in communication through their ducts with the infected small intestine.

Changes in the Kidneys.

The eliminating organ on which, after the liver, most stress appears to be thrown is the kidney. Upon it devolves the strain of getting rid of abnormal toxins and organisms, together with an excessive amount of by-products. The changes which the kidney may undergo are most variable, some being slow and almost imperceptible in their progress, while others are very acute. They include the types of Bright's disease, which probably vary with the nature of the organisms infecting the chyme. The kidney eliminates organisms into the urinary tract, through which they may be discharged painlessly and without affording any evidence of their presence. This is frequently the case with *B. coli*. In other cases the elimination of these organisms through the kidney sets up symptoms of great severity, rigor following upon rigor with rapid loss of flesh and extreme prostration. In very acute cases the surface of the kidney may be studded with small abscesses. On one occasion I exposed such a kidney, opened up a large number of small abscesses, packed the kidney in gauze, and stopped an infective process which threatened the life of the patient. As with all other organs and tissues, the improvement that takes place in the kidneys after such treatment as is sufficient to sterilise the contents of the small intestine is rapid and remarkable.

Changes in the Organs of Generation and the Ductless Glands.

In advanced stasis the ovaries are always wasted and shrunken unless they are involved in acquired adhesions, when they become progressively cystic. The uterus is also very small and in the late stages of stasis may be infantile in character, although the woman may have borne children. Perhaps one of the most remarkable evidences of auto-intoxication in the toxic woman is the complete loss of sexual desire, it being in many cases replaced by a feeling of disgust for the normal relation of the sexes. The same applies to the male, but to a less degree. The testes become small and soft, and the normal testicular sensation is much impaired.

The complications which arise from these marked degenerative changes are chiefly responsible for the existence of the Divorce Court. The thyroid is the organ which is most closely associated with the sexual function, especially in the female, in whom its variations in size afford clear confirmation of the preponderating influence of sex in the woman as compared to man. In stasis the thyroid becomes enlarged at the onset but soon wastes, and later may shrink so much that its presence cannot be detected by the finger.

It would seem reasonable to argue by analogy from the effect of stasis on the thyroid that the pituitary and adrenal glands behave in a similar manner in their attempt to meet the damage to structure and the drain upon their function that must result from the supply to their tissues of blood heavily contaminated with toxic products. In the case of the adrenal this is suggested by the remarkable pigmentation of the skin which develops in stasis, especially in those of the brunette type. In advanced stasis the symptoms are definitely those of Addison's disease, but their disappearance after colectomy proves that the damage done to the suprarenals has not been irreparable. Unfortunately, our knowledge of the functions of the adrenal and the pituitary body are too incomplete to allow of much dogmatism on the changes which result in their structure and functions as the result of stasis.

Changes in the Breasts and in the Mouth.

The breast undergoes very typical changes in stasis. It becomes hard and nobbly, and after a time a large number of cysts develop in its substance, some of which may assume a considerable size. This change commences usually in the upper and outer zone of the left breast, then it appears in the corresponding portion of the right breast, and later may involve the entire substance of both breasts. These degenerated breasts are very liable to be affected by cancer.

The tongue is almost always unhealthy in appearance. It is often abnormally large and marked by the teeth, which may decay early in life. The fauces and pharynx appear unhealthy. The sense of smell and of taste are often impaired; the breath is not infrequently offensive, and the patient experiences a bad taste in the mouth.

Changes in the Nervous System and in the Eyes.

The effect of auto-intoxication upon the brain and nervous system is very striking and calls for much sympathy. Headache, varying in intensity, is a common symptom. I have known it so severe, and accompanied with such violent attacks of vomiting as to lead a very distinguished neurologist to diagnose a cerebral tumour and to urge operative interference. Neuralgias are frequent and may involve a great variety of nerves. They may be very intense. Rheumatic pains are constantly complained of. The patient, while sleeping badly, may find it difficult to keep awake during the day. Bad dreams are frequent. On awakening in the morning the feeling experienced may be that of extreme prostration, no apparent benefit having been derived from the night's rest. The most distressing symptom of intestinal auto-intoxication is the depression which so frequently accompanies it. It varies in severity from a feeling of mental incapacity to one which not infrequently leads the sufferer to attempt to terminate an existence which has been become intolerable. All efforts at mental concentration are futile, while any physical exertion is followed by a period of complete exhaustion. These patients become introspective, and women especially are liable to become intensely religious.

The term "neurasthenia" is very often applied to this condition of the nervous system. In some degree it is an almost invariable symptom of stasis. The patient loses control and fits of irritability or of violent passion are not infrequent. Such a person is difficult to live with. Many are supposed to be stupid, dull, inattentive or even imbecile. This feature is more marked in the growing child, who is often at the bottom of the class and may be severely criticised or punished in consequence.

The eyes are always affected. They afford an excellent and very delicate indication of the degree of auto-intoxication and the changes they undergo are of great value to the observer. They are due chiefly to degenerative processes in the lens and to loss of power in the ciliary muscle. Mr. Ernest Clarke has described these conditions with his characteristic clearness.

Changes in the Skin.

The skin varies in character in different parts of the body. The most marked feature is a staining or pigmentation over the abdomen, chest, and neck. This is particularly noticeable in the neck, axilla, and groin, and over any area which has been exposed to pressure. The staining is usually uniform, but it may be blotchy in character. Like all the other manifestations of auto-intoxication this symptom varies with the colour of the hair. While it is very marked in dark-haired people it is very slight or absent in those whose hair is red or towy coloured. The skin of the abdomen is thin. When dragged on at any point it presents innumerable fine ridges or wrinkles. The skin of the back of the trunk feels thick. Over the extensor surface of the upper arm this thickening is very conspicuous, and suggests to one's fingers that the subcutaneous tissues are permeated with a gelatinous material. The colour of the skin in this area is often blotchy and livid, even in quite mild weather. It is frequently covered with papules, and may be so disfiguring as to render it impossible to expose the arms in evening dress. The hair becomes grey, thin, and tends to fall out. At the same time a fine down grows on the cheeks, the chin, and upper lip. The margin of the hair-line on the forehead and eyebrows is ill-defined, and hair covers the adjacent skin beyond the normal limit. Hair also grows on the back of the forearms. The perspiration is often profuse and offensive. The temperature of the body is invariably subnormal, any rise indicating the presence of some superadded infection. The ears are cold and livid. The temperature of the surface of the body changes abruptly at the level of the deltoid, the skin becoming progressively colder as the fingers are approached. In consequence of this defective circulation the forearm and hand become livid with any depression in the temperature. This may be so marked a feature as to make it difficult to draw any sharp line between stasis and Raynaud's disease.

In some cases the skin may be quite blue, and this colour may vary. To it the term "microbic cyanosis" has been applied. The same low temperature is observed in the legs, the patient occasionally complaining of loss of sensation up to the level of the knees.

Loss of Fat and Wasting of Muscle.

The disappearance of fat plays, perhaps, a most disastrous part in the sequence of chronic intestinal stasis. Though it is usually an early and pro-

gressive feature it is not universal, as some patients may have acquired a condition of considerable obesity before stasis becomes a marked feature. The loss of fat gives to the patient an appearance of senility. The graceful curves of the breasts, abdomen, and buttocks are replaced by pendulous wasted breasts, by a flaccid abdomen, and by wasted soft buttocks. The removal of fat results in the prolapse of the viscera, and especially of those that are largely dependent on it for support. The kidneys drop and their functions are impaired in consequence. The outflow of urine is obstructed by the angulation of the ureter at its junction with the pelvis or over a vessel and hydronephrotic conditions result. The venous flow from the kidney is similarly obstructed, and in consequence the organ becomes gorged with blood and very sensitive. As it lies upon the hard floor formed by the iliac fossa its sensitiveness is increased by every movement, and the pain and distress which ensue are considerable. The puddling of urine in the pelvis increases the risk of infection by *Bacillus coli* or other organism expelled by the kidneys. The loss of fat also permits of the further dropping of the intestines and increases the angulation and obstruction at difficult points. The uterus and bladder miss the support afforded by fat, and their consequent prolapse produces many inconvenient symptoms.

The wasting of the muscles which occurs early in stasis is responsible for a great variety of symptoms. It affects both the voluntary and the involuntary muscles. Perhaps the earliest evidence of loss of power in the voluntary muscles is afforded by the loss of thoracic respiration, the patient depending for the oxygenation of the blood upon the more reflex and less exacting action of the diaphragm and abdominal muscles. The attitude which is assumed in consequence is very disfiguring. It is interesting to note that this condition of abdominal respiration precedes, and is responsible for, the development of all those deformities which I regard as due to the fixation and later the exaggeration of "resting postures," which are all thus indirectly due to the auto-intoxication of chronic intestinal stasis. They are "dorsal excurvation," "flat-foot," "lateral curvature," and "knock-knee."

As regards the involuntary muscles, the passage of material through the bowel is influenced by wasting of the muscle and nerve fibre of the intestine, and a veritable vicious circle is thereby developed. The flaccidity of the muscle fibre of the uterus is responsible for the several versions and flexions which this organ develops, and they are exaggerated by the absence of the fat which plays such an important part in supporting this organ in position. Mr. Chapple has demonstrated the very close dependence of uterine disease on intestinal stasis. The changes in the heart substance and in the walls of the vessels produced by intestinal stasis have been rendered perfectly familiar to us by Mackenzie's elaborate researches, and we now realise the degenerative changes that are produced in the cardio-vascular system by stasis.

Importance of Intestinal Auto-intoxication in the Ætiology of Other Diseases.

Having considered the very serious depreciation in the vitality of every tissue in the body consequent on intestinal auto-intoxication, we will now pass on to study the danger to which the individual is exposed through their lowered resisting power to the inroad of organisms or their toxins. While in the large proportion of cases the infection of the chyme by organisms and their toxins is secondary to chronic intestinal stasis, it is possible to produce such an infection in a normal drainage scheme by flooding the intestine with decomposing material by the mouth. This is well illustrated by McCarrison's observations and experiments on the production of pathological changes in the thyroid. He showed that in an apparently healthy gastro-intestinal tract he was able to produce goitrous changes by feeding the individual on toxic material, and that on this supply being cut off the normally functioning intestine was able to free itself rapidly from infection, when the enlargement of the thyroid disappeared.

The infection of the chyme by organisms in the static subject leads, as I have shown, first to an enlargement of the thyroid gland and later to its atrophy. In such a subject the superadded infection of the chyme results in the development of any of the several varieties of goitrous change. The evidence in favour of this is that in every variety except that of malignant disease complete recovery or very definite improvement follows on colectomy or such operative or other measures as restore the ileal effluent to its normal state. In many of the cases on which I have operated Dr. Mutch has shown that it is necessary or advisable to employ vaccines obtained from cultures from the contents of the small intestine of the sufferer at the time of operation in order to free the mucous membrane from any organisms that have obtained a foothold in its substance. Obviously such a culture can be best obtained at the time of operation. This shows that while the material that is responsible for the development of pathological changes in the thyroid gland cannot survive for any length of time in a normal gastro-intestinal tract, it readily establishes itself in the static small intestine from which it is difficult to expel it. In other words, changes in the thyroid will not develop in normal hygienic conditions unless the sufferer is the victim of chronic intestinal stasis. This I believe to be true of a large number of diseases to which I will allude briefly in order to illustrate my views on the subject.

I do not propose to indicate in detail the several organisms that are apparently responsible for these infections of the thyroid gland, &c., as Dr. Mutch is dealing with the matter in a book which will be published shortly. Perhaps the diseases that show in the most startling and dramatic manner the disappearance of their most obvious symptoms after colectomy are rheumatoid arthritis and Still's disease. In either case, previous to the operation, the sufferer may have been in great pain with joints swollen and fixed, complicated in Still's disease by the presence of rigors and changes in the heart. Within a few days of the operation all pain disappears, long-standing fixation of the articulations is replaced by rapidly increasing mobility, while the swelling and thickening of joints subside in a remarkable manner. In both these conditions, as in that of the thyroid, it is well to continue the use of vaccines for some time in order to eliminate any residual infection of the walls of the small intestine, of the ducts of the liver and pancreas, &c. In tubercle, while the resulting improvement is very manifest, more time elapses before a definite result is observed.

The first manifestation of the invasion of the tissues by organisms occurs at an earlier period of

life. In the young subject the area that is most exposed to invasion is the naso-pharynx. In the toxic child the resistance of the mucous membrane of the lymphatic tissues of the naso-pharynx is materially lowered, with the result that organisms obtain a foothold in the mucous membrane, pharyngeal and faucial tonsils, and in the sinuses communicating with this cavity. Later infections of the lymph glands in the neck ensue. I do not believe that these tissues can become chronically infected, unless their vitality has been reduced by auto-intoxication. This view is supported by the rapid improvement that results from the administration of paraffin in sufficient quantity, and also by the presence in most of these cases of the clinical manifestations of intestinal stasis.

The next most common result of the depreciation in the vitality of the tissues brought about by intestinal auto-intoxication is the invasion of the gums by organisms in pyorrhœa. Organisms secure a foothold in the interval between the gums and teeth, and manifest their presence as an infective or inflammatory process. This extends into the socket, and results finally in the loss of the affected teeth. The absorption of the septic products into the circulation, while their passage into the gastro-intestinal tract increases the infection of the chyme by organisms, exaggerates the symptoms of auto-intoxication. This increase in the depreciation due to the absorption of toxic material from the gums may be so considerable, and the benefit obtained by the cure of the pyorrhœa so great, that many observers have been led to regard pyorrhœa as the primary factor in the causation of intestinal auto-intoxication. Against this view are the facts that patients with most advanced stasis may have perfectly healthy gums, while the extraction of the teeth, which is so frequently performed for this condition, has exerted no influence on the conditions of stasis calling for a colectomy.

Dr. Mutch is of opinion that the septic organisms in the gums can produce secondary infection of the intestinal mucosa and form a starting-point for diseased conditions in all parts of the body.

Dental surgeons like Mr. Harry Forsyth, who have immense experience in the treatment of pyorrhœa, are convinced of the dependence of this condition on intestinal auto-intoxication produced by chronic intestinal stasis.

I have very clear evidence of the fact that those who develop such diseases as are mentioned in the following list have suffered for some time from chronic intestinal stasis: non-specific arteritis obliterans, angina pectoris, rheumatoid arthritis, Still's disease, tubercle, exophthalmic goitre, adenoma of the thyroid, Addison's disease, Raynaud's disease, diabetes, ulcerative colitis, microbic cyanosis, dementia præcox, pernicious anæmia, disseminated sclerosis, paralysis agitans, infective endocarditis, and in many instances alcoholism and the drug habit, and numerous forms of skin disease. One might add largely to this list of diseases, but it is sufficient to illustrate my view that they are due to the infection of the tissues of a toxic subject by organisms which could not have obtained a foothold in one whose drainage system was sufficiently perfect, and that the freeing of the wall and contents of the small intestine from infection may so improve the vitality of the tissues as to enable them to destroy the invading organisms and so free or relieve the sufferer from the symptoms they produce by their presence.

The problem before us is, "How can we in any particular case remove the contamination of the food-supply of the individual in the simplest and most efficient manner?" It is obvious that in time the elimination of the infection will be effected more and more by medical means, and it will become less often necessary to resort to surgical measures. These conditions must be dealt with as early in life as possible. Too much stress cannot be laid on the fact that cancer, which is shown by the elaborate statistics[2] of Dr. Hoffman to be largely on the increase (2·5 per cent. per annum), is dependent for its development on three factors, two of which are necessary to its production—namely, stasis, syphilis, and traumatism. Apart from the action of these three causes I do not believe that cancer can arise, and by far the most common combination in determining its presence are stasis and traumatism. By traumatism is meant any mechanical condition that damages the vitality of the tissues. In the vast majority of cases the injury to the cells is produced by auto-intoxication or by the direct extension of infection to them from the intestine.

In view of the much greater frequency of stasis in the female than in the male, it is not surprising to learn that cancer occurs twice as often in women as in men. The rarity of cancer amongst native races living in the savage state and its frequency in those who have been civilised for some time help to support the view that stasis plays the chief part in the causation of this disease.

PSYCHO-THERAPY IN ORDINARY PRACTICE.*

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IN general practice cases suitable for psycho-therapy, many of which cannot be treated in any other way, frequently occur. The general practitioner has a great advantage in that he is able to pick both the case and the patient; he is not confronted with the difficulty of the patient being disheartened by the failure of other treatment. He also knows in advance the patient's previous history, habits, and temperament, and so can quickly pass on to treatment. On the other hand, the quickest and best results of psycho-therapy are usually obtained with patients one has never seen before, especially if treatment is started at the first interview; the ordinary practitioner may not have sufficient reputation in this kind of practice to produce the impression on a patient that a specialist can; he suffers from an additional handicap in that often he has not time either for a prolonged interview, which may have to be extended to four hours, or for a sufficient number of consecutive treatments. The cases I will describe never required long treatment; many of them were cured at one sitting. Before referring to them I wish to insist on the necessity for careful diagnosis; with psycho-therapy we require the greatest refinement in diagnosis; we want not merely a general idea of whether the condition is in the main functional or organic, but a decision often in

[2] The Mortality from Cancer throughout the World, by F. L. Hoffman, Prudential Press, 1915.

* A paper read at the meeting of the Birmingham Branch of the British Medical Association on Nov. 20th, 1919.

regard to the nature of each symptom, because experience has shown that it is absurd to limit the use of this important branch of therapeutics to the so-called neuroses only; certainly it is valuable in them, but it is even more valuable in dealing with many of the symptoms of psychic origin associated with organic disease, such as continued vomiting in phthisis, and insomnia and chronic pain in many illnesses. This point has been emphasised by Colonel A. F. Hurst, of Seale Hayne fame. In these cases the objects and limitations of psycho-therapy must be clearly defined.

Psycho-therapy for Neuroses.

The first case I will refer to was one of neurosis.

A young married woman complained of severe pruritis ani of ten years' duration; she had never sought nor had any treatment. She had one child 3 years old, had always been healthy, and had no idea how the trouble developed, but said it had been there at least 10 years and seemed as if it had been there always. There were no piles or fistulæ or any other abnormality except a slightly ragged appearance of the mucous membrane round the anus. The urine did not contain sugar and no disease could be detected. I had never seen the patient before, so, as she seemed a suitable case for psycho-therapy, I told her that while ordinary treatment might be disappointing and take a long time, special treatment would quickly deal with the case. Mental analysis showed that the root of the neurosis was an ischio-rectal abscess from which she had suffered 10 years previously and which burst one day when she, a girl of 17, was at a picnic, where she suffered intensely. It was explained to her that after this unfortunate experience she must have dreaded a recurrence possibly under even more awkward circumstances, and that while what she dreaded had never happened, focussing her attention on this region had led to other trouble there. It was also suggested to her that the area of discomfort would feel cool and that all irritation would disappear in a short time. When the treatment was concluded she announced that she felt much more comfortable. She said I seemed to have placed a cool pad over the affected area and that she was easier than she had been for years. No further treatment was required; when I met her a few weeks later she told me that she had continued to improve and was almost well.

The next case also illustrates the importance of beginning treatment at once.

A young man who had been in the Royal Air Force and discharged as disabled, complained of frontal neuralgia and persistent headache. His history was that he had crashed in the North Sea, falling face downwards, through the bottom of his plane, and being subsequently found by his observer in the sea clinging to one end of the plane and practically unconscious. This happened during cold, stormy weather at midnight. His observer managed to take him on his back and swam with him to shore, taking nearly an hour in doing so. He then deposited him, as he thought, dead, but later moved him to a neighbouring V.A.D. hospital on the chance that he was still alive. The patient stayed at the hospital for some weeks and recovered, except for persistent headaches and frontal neuralgia, in consequence of which he was discharged from the army as permanently disabled. The accident had occurred 18 months before I saw him. He told me that the pain had somewhat diminished, but that he was never free from a considerable degree of headache, and at intervals suffered from agonising pain lasting for hours. A severe attack had been the cause of his visit to me. As I thought it might be a difficult case I decided to make the most of the circumstance that I had never seen him before, and started treatment at the first interview, although I had not had time to make a thorough examination. I treated him by "waking suggestion"; when he came back on the following day I finished the examination and continued the treatment. Examination showed there was nothing wrong with the eyes, and no disturbance of vision, while his organs were sound and healthy. When he came back on the evening of the third day he said an extraordinary thing had happened; he had felt much better than he had done for years and free from headache and pain. I told him that was not surprising, as it was the result to be expected from the treatment, though I had been unable to tell him how soon it would come. He added that he did not think he required any further treatment; I confirmed him in this idea, and he has remained perfectly well.

In such a case the original pain is due to the severe injury to the nerves and other tissues of the face and forehead. Later on the pain continues as a habit. Once the habit is broken it does not return.

A somewhat similar case shows the importance of analysis in cases where the original cause is not permanently removed.

A young married woman with two children had suffered for some years from severe headaches and neuralgia of the side of the face and neck, and also of the back of the neck. The pains were aggravated by reading, sewing, and also by work of any kind. She was not robust, but there was no eye trouble, no disease, and nothing wrong with the teeth on X ray examination; no medical treatment was effective except rest in bed for days at a time. Analysis showed that the condition was a defence mechanism, dating from the time of her marriage, and having its origin in a difficult mother-in-law, who was critical and unpleasant to visit. Matters became worse when the mother-in-law came to live in an adjoining road. A few suggestion treatments relieved the pain and stopped its recurrence, the suggestion being made among others that unpleasant duties would cease to be a strain and would not be dreaded beforehand, while the capacity for work of all kinds and for using the eyes would increase.

In such cases the result of proper treatment is not to leave the patient weak and dependent on the practitioner, but stronger and far more independent.

One of my patients, a young unmarried woman, had suffered from tinnitus aurium for over four years; as ordinary treatment had failed to give relief I decided to treat her by psycho-therapy.

The trouble dated from an accident, when her cheek was cut open by the golf-club of another girl with whom she was playing. This caused a nasty wound and scar. Mental analysis showed that, in addition, she had been greatly upset when 16 years of age by her father, who detected her in a lie and violently boxed her ears. The father was a hard, unsympathetic man, who frequently broke out into violent abuse of her conduct when it was displeasing to him. Treatment by "waking suggestion" soon caused a diminution of the noise, which resembled a factory blower and had been very loud and disturbing. After she had greatly improved a cold and cough temporarily increased the noise, but further treatment soon cured it.

In this case there was much benefit from making the patient see mental pictures—a form of treatment to which I shall refer later.

The next case, also a functional one, was a married woman who had had great anxieties about her husband and children.

Shortly before one of her little boys had been attacked and injured by a group of school-boys. She had an attack of earache and otorrhœa. This caused the greatest distress, as she imagined she was going to lose both her hearing and her reason. She could not sleep, and was in a state of great nervous excitement when she came to consult me at 8 o'clock in the morning, but there were no real mental symptoms. Psycho-therapy was urgently called for, so I calmed her for the moment and said I would give her special

treatment in the evening. After it she was easier in her mind and slept well. Two subsequent treatments completely relieved her distress.

Improvement in a Case of Paralysis Agitans.

An old lady who had suffered from paralysis agitans for six years had been under my treatment for the last four years, during which time she suffered continuously from severe pains in the soles of the feet and in the knees. She had some heart weakness, and the legs were œdematous. She was treated with hyoscine, heroin, and many other drugs, including organic extracts, but, as often happens in paralysis agitans, nothing was of any use; as she was constantly in pain and miserable I suggested to her daughter, who was worn out with attending to her, that the proper treatment would be by suggestion, as it was the only means of relieving her pain. The daughter was delighted with the idea, but feared her mother was too strong-willed for it to be a success. I told her this was really an advantage. The old lady who was not enthusiastic at first, was very nervous at the beginning of the first treatment, but after the second she announced she had slept better the night before than she had done for a long time. At the fourth interview she stated that during the third treatment the pains had disappeared and never returned. As treatment was so successful I determined to see if anything could be done for the tremors, which were very marked. The next four treatments had an extraordinary effect on the tremors, which stopped during the treatment and never came back to the same extent afterwards. Treatment was then discontinued because the patient did not think it worth while to go any further, as her pain had been relieved. She remained free from pain for three months, when there was a slight recurrence, gradually getting worse. After this had gone on for a week she was given one treatment, which gave complete relief, and illustrates how much more rapidly treatment is effective on a second occasion. This time treatment again diminished the tremors. Both the old lady and her daughter are thoroughly satisfied with the treatment.

There are many records of cases of organic nervous disease which have improved with psycho-therapy, because much of the trouble is functional; in some instances the organic disease has been kept more or less in abeyance for years.

Psycho-therapy in Pregnancy and Lactation.

The following is another instance of a patient suffering from advanced organic disease, who was completely relieved of all her discomfort.

A woman at the maternity hospital was under my care at the seventh month of pregnancy suffering from hyperemesis gravidarum. On admission she was moribund, vomiting every 35 minutes, with intense epigastric pain and complete insomnia; she was said not to have slept for many weeks. When examining her I noticed that the tongue when protruded was deviated to the right; on asking her to puff out her cheeks the left cheek remained flat, but some little time later filled out too. When told to close her eyes tightly the left was firmly closed, but the right could not be shut properly. The right patellar reflex was exaggerated, the left almost absent, but the plantar reflexes were flexor. There were many areas of anæsthesia in the right leg, but none in the left. It was noticed, however, that every time an anæsthetic area was touched her reply was delayed, as if she were uncertain whether to say "Yes" or "No." Obviously she was rapidly developing a functional hemiplegia. It looked therefore as if psycho-therapy might relieve some of her symptoms. The general ward of a maternity hospital is hardly the place one would choose for practising psycho-therapy; however, the house surgeon prepared the patient so well that a single treatment produced an extraordinary effect. "Waking suggestion" was carried out for 15 minutes only, as she was dangerously ill. She was told that her pain would go, that she would not be sick again, and that she would sleep that night. She did sleep for four hours, never had any return of her pain, and never vomited again except on two occasions, on one of which her food was too rapidly increased, while on the other barley-water was given by a nurse in spite of instructions to the contrary. The patient improved daily, and food was rapidly increased. Instead of being restless and difficult to manage she was placid, sleeping at night and dozing during the day. Unfortunately on the fifth day premature labour commenced, but small doses of morphine and scopolamine were sufficient to prevent her suffering any pain. She was greatly exhausted by labour, and succumbed a few hours later. The child was stillborn. Post-mortem examination of the patient showed fatty degeneration of the liver and kidney, while a tumour in the recto-vaginal septum which had been first noticed during labour and diagnosed as a gumma was proved to be so. In addition there was an old healed perforation in the posterior vaginal fornix, specific in origin, but no peritonitis. The pathologist's verdict was "Death from toxæmia."

I do not claim that the treatment produced any effect on the course of the disease, but it is not impossible that if it had been begun several weeks previously it might have done so. Treatment, however, relieved all the painful symptoms. The husband, who was at the time in the army of occupation in Germany, came to the hospital afterwards to express his gratitude for the way in which his wife had been treated, and said it was a great relief to know that she had been so easy and comfortable during her time in the hospital.

During pregnancy there are frequent opportunities of using psycho-therapy with benefit. My attention to this possibility was first aroused by a case in which I believe its use might have prevented unfortunate results.

The patient was a young married woman who was satisfactorily delivered of her first baby under "twilight sleep." On the third day there was some indication of the milk-supply being established, but it soon became clear that in spite of all ordinary treatment it was impossible for the patient to nurse her baby. The patient was one of a family of 12, all of whom had been nursed by their mother, while the three married sisters had been able to nurse their children. The patient herself was a healthy young woman and the nurses in the home were much puzzled as to the reason of failure, and declared they had never seen such a healthy young woman totally unable to nurse. Conversation with the patient later on elicited the following history. Twice during pregnancy she had had severe frights which had preyed upon her mind; during the fourth month she and her husband were wakened one night by loud noises which they thought were due to burglars. The husband got up and found the noise was due to snow falling off the roof. The patient became hysterical for an hour and subsequently was very anxious about herself and her baby. Two months later she was attacked and much frightened by a dog. After this accident a friend told her the baby would have hair on it like a dog. This also made her anxious, as she was afraid the baby would be deformed.

It was too late to try psycho-therapy, but I immediately adopted the course of asking all my pregnant patients when they come into a nursing home whether they have had any particular worry or anxiety. Of course what such patients dread—namely, death or deformity of the baby—practically never happens, but instead, an intimately associated condition—namely, the milk-supply often goes wrong. The filling of the breasts with milk on the third day is usually painful, sometimes exquisitely painful, especially in a primipara. Directly this happens the patient jumps to the conclusion that all the horrors she anticipated are going to overwhelm her after all, and her

subconscious mind revolts against nursing. The benefit of psycho-therapy in such cases is illustrated by the following.

The patient was a healthy young woman who seemed to have a good supply of milk on the third day, while on the next it began to fail. Asked if she had had any worry or anxiety during pregnancy she said she had been dreading the pains of labour all the time. When asked why she should do so when she was going to have "twilight sleep" she said that in spite of that she had been afraid; all her life she had been a coward and unable to face physical pain. She was told this was nothing to be ashamed of, as it must be due to some unfortunate experience she had had in early life. She denied this, but on careful examination it was found that when two years old she had been seized one morning, after her mother had given her a little ham, with intense abdominal pain; some hours elapsed before a doctor could be found, the little girl being in agony all the time. She had often heard her sufferings described, and also the delay in finding a doctor, all that being a family tradition. As soon as she realised the importance of this she related an incident which had happened five years previously. When motoring with a girl friend her dress caught as she was getting out of the car; she fell and severely injured her arm. The pain was agonising. They motored to the nearest doctor, but had to go to many places before they found a doctor at home. The condition was not diagnosed at once, but a radiograph taken on the third day showed a fracture into the elbow-joint. The patient was a healthy young woman, and these two instances were the only occasions on which she had ever seen a doctor till the time of her pregnancy. At the beginning of the war she became a nurse at a V.A.D. hospital, but had to leave in less than a week because she could not stand the suffering she saw. During suggestion treatment it was explained to her that many medical and surgical conditions are not accompanied by pain; that I had seen women have children and suffer no pain, and had attended cases of such serious disease as cancer in which no pain was felt right up to the end. During her pregnancy she had had occasion to consult two medical men whom I know well to be exceptionally prompt and efficient; it was therefore pointed out to her that there were many sympathetic doctors, who could be summoned quickly by telephone if necessary and would at once relieve any real suffering. The suggestion was made that her anxieties about suffering were groundless, that she would have no subsequent pain or discomfort, while she would be able to nurse her baby, and that if any illness or accident happened to the baby at any time she would be able to carry out herself methods of relieving pain which were described to her, while, in addition, she could send for a doctor whom she knew to be kind. Only one treatment was necessary. The milk returned, and both mother and baby did well. She wrote some weeks later to say she often thought of the ideas that had been put before her, and they had been of the greatest help; indeed, they had completely altered her outlook.

This patient gave me an excellent example of the psychic origin of many of the neuralgias; she said that on one occasion she had to stay in bed for two days unable to move owing to an agonising attack of sciatica. When asked what was the cause of that she laughed and said, "Oh, that was another love affair." Her father had forbidden her engagement to a man who was then in France in the trenches. On the evening of the second day her father came up to her room and said, "Look here, little girl, if this engagement means so much to you I will give my consent." She went to sleep almost at once, and woke the next morning absolutely free from pain and never had a recurrence.

Another patient who came into the nursing home ten days before her confinement said that she had been worried because she did not think she would be able to nurse her baby. She had this fear because her sister had been unable to nurse her baby, and when she looked at her nipples she thought they were too small. As she was not robust I thought it possible she might not be able to nurse, especially as her sister had failed, so I did not give her treatment myself for fear of discrediting psycho-therapy. I examined the breasts carefully and told her the nipples were not so small as she thought, and that if she had a week's massage of the breasts everything would come right. A nurse was specially selected to carry out the massage, and, acting under instructions, when she was leaving off one day she said, "Well, there is no doubt that your baby will not have any difficulty, as your breasts and nipples are so well developed." This kind of indirect treatment is often effective. The patient was able to nurse her baby all through.

Another patient who came into Birmingham to have her baby was nervous about getting an attack of asthma, to which she was liable. She had had much treatment from practitioners of all kinds without any benefit, and had been told that no cause could be found. As a matter of fact, the cause was repeatedly seeing her grandfather suffer the agonies of asthma while she was a child. A few days after the baby was born I treated her by psycho-therapy. Shortly afterwards she had a threatened attack, but it did not come to anything. In order to induce quiet rhythmic breathing when an attack was threatened I made her see a mental picture of her little boy and girl on a seesaw, the little boy going very carefully and steadily so as not to jolt his baby sister, who was held on by the nurse. This method of mental pictures, which I have introduced into my practice, is often valuable. This patient said she found it a great help. She said the only thing she did not understand about the treatment was how I managed to know so much about her early life.

Treatment for Neurasthenia.

So far I have dealt mainly with cases of hysteria and psychasthenia, and have not referred to cases of neurasthenia, as they are more difficult, require prolonged treatment, and so are less suitable for treatment by ordinary practitioners. Many cases of neurasthenia are obviously suffering from some physical disorder, and one cannot but think that in some of them medical treatment, especially some glandular extract, should take the first place, and may be all that is necessary. A properly conducted analysis will reveal a cause in some cases, but I cannot help thinking that prolonged analysis and repeated treatment involve great strain on the practitioner, and are sometimes not worth the time and trouble involved or the expense incurred by the patient. Psycho-therapy in itself is insufficient in many of these cases, and must be combined with rest and a simple regulated life, which can often only be obtained in the country or in a properly arranged institution; often the latter is all that is required. In every case the question should be asked, "Is psycho-therapy really worth while in this case?" I believe psycho-therapy is a help in neurasthenia, but it is seldom all that is necessary; curiously enough, it is often less valuable in mental cases than in cases never mental at all. One of my patients developed a severe attack of neurasthenia; he had no energy, was easily fatigued, and greatly depressed. One special treatment did him much good, and was a

great help to me as, during the course of it, I suggested that he should not constantly ring me up on the telephone, asking me to call, but that in future I would call as often as I thought necessary. Although the treatment had a marked benefit it became obvious that if such treatment was to cure him, it must be continued for a long time. As he lived some distance away I decided it would be better to get a companion for him and send him to the seaside. This was arranged with difficulty, but in the course of a few months the patient got well. I know that there are many incidents in his past life that might have been of great interest to some psycho-therapeutists, who might have thought over and over again they had ferreted out the root of the neurosis. I am doubtful whether analysis in his case would not have done more harm than good, especially as I believe the patient would have revelled in recalling his experiences. My opinion is that while analysis is indispensable in some cases and is of great value in many others, yet sometimes it is not worth the time, trouble, and expense involved. No doubt when this treatment was first introduced and before we had the knowledge we now have of psycho-pathology, long examinations were necessary. I cannot help thinking, however, that anyone who has studied the subject and qualified himself to carry out such treatment should be able to get at the root of the trouble quickly. Most of my patients soon told me the cause, even though it was one which the conscious and subconscious mind both wished to conceal. Not long ago a young man came to see me, and remarked that he was subject to asthma which had been cured by his work being transferred to Birmingham from London. While he was in London his asthma was dealt with by analysis, which went on for nine months. I asked him what treatment he had had and he said they had not got up to the stage of treatment. As this case could be cured straight off by change of climate, psycho-therapy for nine months as a start was not indicated; indeed, I believe it was actually injurious, especially as the young man had been given a number of books to read on the subject which he said had greatly interested him. It ought not to be difficult to find the root of the neurosis in a young unmarried man, 24 years of age. Certainly it ought not to take nine months. I told the patient that if he developed any asthma while he was here I could cure him by psychic methods, but that treatment would not take even nine days, nine minutes being nearer the mark. Many cases of asthma can be put right by proper treatment.

Some years ago a young woman came to ask me to continue the mental analysis she had been undergoing on the continent on the ground that not enough had been discovered. Her examination had been continued for 18 months. The trouble was that she had a horror of wasps; she would rush out of the room screaming if she saw a wasp. All that could be found out was that as a child she had had an unfortunate experience on the same day on which she was stung by a wasp. Knowing what we do about children's habits and accidents I should have thought this fact could have been found out earlier. I at once told her that the best thing she could do was to go back to her work again. I met her accidentally in another town some years later, when she said she was much better and was satisfied that the advice to take up work again was the best advice she had had.

In all cases of neurasthenia it is necessary to consider whether there is any congenital mental defect. As medical officer to the Birmingham Mental Deficiency Committee I know that some mentally defective men who were never really fit to be enlisted in the army are now suffering from shell shock. In some of these cases where psycho-therapy is being carried out the only result will be disappointment. It is important to find out first what was the patient's original mental capacity. All suitable cases show some repose at once, and I have always accepted Sir Frederick Mott's dictum in psycho-therapy that there should be an improvement in some direction the first day of treatment, treatment being, of course, distinguished from investigation.

The next case illustrates the importance of rest and relaxation, a form of psycho-therapy which is sometimes sufficient in itself.

A head mistress complained of a rheumatoid infection of the hand. I decided to treat her by a course of vaccines; *B. coli* were found in the urine and corresponding autogenous vaccines prepared. Just as she was leaving at the end of the first interview she said, "I wish you could give me some fresh pluck, but I am afraid that is a hopeless thing to ask a doctor for." I told her that such treatment was easier than the treatment for her arthritis. She said she had lost confidence in herself and thought she was not equal to her work. Saying that I could give her a more comfortable frame of mind quickly, I told her to lie down on the couch in an easy position, just as she would do on her own sofa at home. She lay down, but it was evident she was not in a restful position, her whole frame being tense. She then said that during term she never was able to rest properly, and always felt in a state of tension and nerves. When asked to take deep breaths her mode of respiration was faulty and ineffective. I explained how to relax and how to breathe properly, and advised her to have a course in voice production. This she did and derived considerable benefit. As she was returning to her work immediately she was not able to come back for further treatment, so I wrote and reiterated the instructions I had given about breathing, and the importance of resting in the early part of every afternoon. She replied that I evidently did not understand the nature of her work or I would not suggest resting during the middle of the day. In reply, I said that rest every day was essential, and that as she was headmistress the matter was in her own hands; that it was a matter of organisation; and that her deputy must be responsible at 2 o'clock every day while she rested in the manner prescribed. She replied that she realised the importance of the advice and was carrying it out, and already felt better. A few months later, as her breathing and power of relaxation had improved, I gave her three treatments, using "waking suggestion." It then transpired that one of the original causes of her anxiety was that as a girl she had one day had an unfortunate experience in the road, and was always afraid that some of her pupils might meet with the same trouble. I never heard the details, but explained to her that as long as she looked after her pupils well while they were under her care she was not responsible for their protection after they had left the school; that rested with their parents and the police. A few weeks later she told me the treatment had been beneficial, and that she had applied for the head mistress-ship of a larger school.

Investigation of Criminal Cases.

Before concluding I should like to refer to some cases of a different type. Early in the present year I was appointed psychological expert to the Birmingham magistrates, and so have had opportunities of examining unusual cases convicted of crime. This work is a whole department in itself. Mental analysis is of great value, because in many

cases the crime for which the prisoner is convicted is not the cause of his going wrong and is not the condition which requires treatment. For instance, women convicted of theft are often inebriates and only steal to get money for drink. In the case of a young girl convicted of stealing, analysis showed that the reason she had taken to theft was that she was in an uncongenial occupation. She wanted to be a pupil-teacher and ultimately become a school-mistress, but her mother insisted on work in a factory. As the work was distasteful to her she stayed away from it. As she required money and did not earn it, she stole from her parents, against whom she had a grudge. Imprisonment in such cases would be disastrous; the only chance is a properly regulated life with change of occupation and possibly some psycho-therapy as well.

Anyone who has to deal with these young criminals cannot help being struck by their extraordinary suggestibility; they are just as open to good suggestions as to bad, and if only they can be placed in proper surroundings their character can be greatly influenced by suggestive treatment of one kind or another.

I can give you no better illustration of the importance of thorough medical investigation in these criminal cases than a boy I saw since this paper was written.

A gentleman brought for my advice his son, as he had been stealing, and no cause for this abnormality could be discovered. He was an intelligent well-set-up boy of 16, very keen on his training in farming, which he had just started. I found that for three years he had been the victim of self-abuse, and in addition was a hystero-epileptic, and I suspected that true epilepsy was developing. He gave a clear account of momentary forgetfulness, when he seemed to lose himself; he often talked and even shouted in his sleep, had been a sleep-walker, and on one occasion recently fell out of bed during the night. I have put him on bromides and arsenic for a month, as I want to see the effect of medicinal treatment first; if that is no use I expect psycho-therapy will help him; it has great possibilities in hystero-epilepsy and even in incipient adolescent epilepsy. As the boy is leading a healthy life and has a good family record, the prognosis is fair. The self-abuse is an infantile complex which should be dealt with as such, proper occupations being provided, and ideals of development, manhood, and family life being built up.

Conclusion.

In conclusion, I should like to say I believe psycho-therapy will furnish the explanation of many illnesses and diseases, and is a powerful agent in relieving chronic pain, distress, and anxiety; it is also an important factor in promoting efficiency and in strengthening character.

V.A.D., SUSSEX 53.—Some interesting figures were given at a gathering at Brighton on Dec. 3rd to celebrate the end of the arduous war work of the Sussex 53 Voluntary Aid Detachment, and the detachment's settling down to peace conditions. During the war period no fewer than 250 convoys arrived at Brighton containing just over 38,000 sick and wounded, occupying the detachment 729 hours, or 91 eight-hour days. Service was entirely voluntary, and Commandant C. G. Yates was absent on three occasions only. On orderly duty at the Lady George Nevill, Larnach, and Red Cross hospitals, members put in over 26,000 hours' duty; and the detachment turned out at the emergency stations fully equipped at all air-raid calls, but, fortunately, were not needed. Tribute was paid to Mr. J. A. A. Orlebar, C.B., the medical officer of the detachment, for his lectures, which were given gratuitously. Convoys of men broken in the war still arrive at Brighton at intervals of about a month, and are conveyed by the detachment to the Kitchener Hospital, Elm Grove, while the members still give attention to civilian cases when called upon.

HYSTERICAL SLEEPING ATTACKS:

TREATMENT BY GROSS SUGGESTION, REINFORCED BY THE OPERATION OF TREPHINING, WITH NOTES ON BEHAVIOUR IN HYPNOTIC SLEEP.

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History of the case.—The patient, aged 19, was admitted to hospital in June, 1918, with a diagnosis of mental disease. He is a boy of average intelligence, and his home is in Lambeth. He is the eldest child of English parents, and he has five brothers and two sisters, all of whom are well. His mother is well. His father was killed in the war. His story was that since early childhood, for as long as he could remember, he had been liable to go off to sleep at any time and without any feeling of fatigue. He had never been a week free from this. There is no history of fits in the patient, or in his family. He does not walk in his sleep, and he is never incontinent. Except for the sleeping attacks, which he is quite unable to resist, the boy feels perfectly well in every way, and he has always been in good health. He has only once suffered injury by reason of the attacks. He joined up in December, 1915, and since February, 1917, he has been at sea. On several occasions he has been punished for going to sleep on duty. He was very anxious to be cured. As soon as he was seen, and his history obtained, he was sent to the neurological ward.

A more detailed account of his attacks prior to his admission is as follows. He says that he has frequently fallen out of bed at night and been put back, but has known nothing about it until told of it the next morning. When he was 15 he went to sleep on the tail-board of a moving cart, and, being thrown off, injured his knee slightly. On another occasion he was on the top of a van and went to sleep just before the van reached a railway arch. The road was well known to him, he saw the archway, and knew that he would be struck if he did not move, but in spite of all this he was unable to resist going to sleep. He was caught by the archway and thrown from the van, but escaped, fortunately, with a few bruises. He says that his parents have always had great difficulty in rousing him in the morning.

Account of the sleeping attacks observed in hospital.—The first attack was on the day following his admission. As dinners were being served in the ward he walked to the chair by his bed, sat down, and immediately went to sleep. I found him sitting with his back to the ward, his head dropped over to one side. He held on to the bedclothes with his hand, and when I removed it he fell heavily to the floor and would have hurt himself had his fall not been checked. For a few moments he remained where he fell, then his eyes opened, and he got up, appearing to be very surprised at finding himself on the floor. He had no recollection of falling and could not explain the incident. Directly after dinner he lay on his bed, and during a sleep which was apparently normal he fell off and was lifted back. He did not wake for some time after, and he had no recollection of falling. Many similar attacks occurred both by day and night. Once he went to sleep sitting on the stairs. On another occasion he went off while sitting on a bench cleaning knives, and the following day he had an

attack while he was scrubbing the floor, and remained motionless for ten minutes with his arm immersed up to the elbow in a bucket of water. I failed entirely to waken him in these or in any of his attacks; neither did anyone else have the slightest influence over him when he put himself to sleep. He made no sound and he did not reply to questions. His lids were closed. When he was lifted on to his feet he collapsed on to the floor, and as a rule in five or ten minutes he woke quietly of his own accord. On no occasion did he struggle or show any of the manifestations of a fit. In all his own attacks, as also when he was under the influence of hypnotic suggestion, his eyes rotated upwards at the moment the lids were raised. (See Fig. B.) He was observed only on one occasion to go to sleep while he was walking about, but he told us that this had happened fairly frequently in the past. The attacks had no relation to the colleagues of experience. The patient, however, was never seen to hurt himself in his repeated falls, never had any loss of sphincter control, never altered in colour, and never showed an extensor plantar response during or after an attack. On the other hand, he had no manifest hysterical symptoms between his sleeping bouts or on waking from them.

Notes on the Behaviour of the Patient in Hypnosis.

On the assumption that he hypnotised himself it was probable that he would be an easy subject to hypnotise, and this proved to be the case. He had not been hypnotised before. On the first occasion he reacted to my suggestion in about a minute, and after this I had merely to tell him to look at me and go to sleep and immediately he would be sound asleep. Several other medical men at different times attempted to hypnotise him, but without

A, Awake. B, Hypnotised. C, Hypnotised. D, After operation.

company he was in or to the existing circumstances. He would go off to sleep when he was by himself as readily as in a crowded ward.

Night attacks.—Often it was reported that while the patient was sleeping quietly he would suddenly snore or breathe deeply and would then attempt to fall out of bed. More than once he did fall, and then he rolled under the next bed. On no occasion did he wake during this performance. Sometimes he persisted in falling out of bed several times in succession. As a rule he was very difficult to rouse in the morning.

The total number of sleeping attacks which were observed during four weeks was 33. The longest interval of freedom was six days.

Diagnosis.—Except for enlargement of one of the turbinate bones examination revealed no evidence of organic disease in any system. The boy's physical health was good, but his expression was rather bad-tempered and he looked worried (see Fig. A). He was not addicted to bad habits. The Wassermann reaction was negative in serum and cerebro-spinal fluid, and the fluid was in all other respects also perfectly normal.

The only two possibilities as regards diagnosis were hysteria and epilepsy. I was confident that the attacks were hysterical, due to his own suggestion; in other words, I thought that he hypnotised himself. Many attempts were made, both when he was himself and in hypnosis, to discover any underlying cause for the condition, but all proved fruitless. This failure to find a basis for the attacks prompted a diagnosis of epilepsy from several success. This was not due to any counter-suggestion of mine; in fact, I told the patient that I wished him to go to sleep at their bidding. He made no conscious effort to resist them, but said that he did not feel sleepy.

When he was hypnotised he obeyed all my instructions promptly, and ate, danced, smoked, and sang songs to order, but he accepted commissions from no one but myself unless directed to do so by me. He said that it was idle for me to tell another in his hearing that orders from him would be obeyed, nor would he respond to my written orders unless they were presented directly by myself. When told to fall off the bed he rolled over and fell very heavily on to the floor, making no attempt to save himself, and narrowly escaping injury. The fall did not waken him. Before he was hypnotised he was shown a form of will made out so that his possessions were left in a certain direction, and he was asked to put his signature to it. He not only refused but he wrote across the paper "I refuse to sign this." A moment later he was hypnotised and signed without protest a precisely duplicate form. He said that he would shoot me or himself at my command, that he would jump from an upper window or remain in a burning room, and he left no one in any doubt that he would be as good as his word. He was told to strike an officer of high standing (a court-martial offence), and did so. Similar instructions when he was awake made him very indignant. It is unnecessary to give further illustrations of the absolute power over his behaviour and actions which I was able so easily

to exert when he was hypnotised, but there was an abundance of evidence to controvert the statement made by Dr. J. A. Hadfield in "Immortality" that "the hypnotised person will refuse to do anything that is strongly repugnant to him ..... and is therefore not the automaton some people would have us suppose." All my investigations were conducted in the presence of medical witnesses.

When the eyelids were passively raised it was observed that the globes were rotated upwards (see Fig. B). Later it was noticed that this rotation occurred at the moment the lids were raised. The same thing happened when he put himself to sleep. When he was told to do so he opened his eyes normally and all ocular movements were correctly performed (see Fig. C). Awake, he was quite unable to rotate the eyeballs more than the normal amount. On one occasion cutaneous analgesia was found in the absence of any suggestion. With this exception sensation was absolutely normal, but the most extensive and profound analgesia and hyperæsthesia could be produced and removed at a word, although I did not succeed in suggesting complete absence of pain when he was touched with a hot iron. Pin-pricks caused the normal amount of hæmorrhage. I was unable to demonstrate hyperacuity of vision or of hearing, but Dr. Craig Dunlop found that in hypnosis the bone conduction was increased. Reflex blinking to the stimulus of bright light was present until its abolition was suggested. The patient did not rouse when water was thrown over him or when he was stimulated in other ways. He was oblivious to very loud noises close to his ears, such as that made by banging a poker on a shovel, although no suggestion had been made that he would not hear it.

He was unable to make his respiratory movements quite imperceptible, when told to simulate a man dead. Marked rigidity of the limbs was suggested with ease, but the suggestion of extreme continued rigidity of the trunk as a whole was not successful. Attempts to produce thought transference were unavailing. He said that he obeyed me merely because he heard my voice, even when I whispered. He would not admit any other reason. No one of many observers succeeded in waking him. When he was awake he had no recollection of any of the incidents which had occurred, but most of the details were recalled in subsequent hypnosis. He did not remember in hypnosis occurrences during the periods when he put himself to sleep.

On one occasion I hypnotised the patient at 11 A.M. and told him to remain asleep until I wakened him at 4 P.M. I found on my return that he had wakened himself at 1.30 P.M. Another time I told him, when he was hypnotised, that he was to telephone to me two hours later when he was awake. I then woke him up and he had his dinner. At the exact hour appointed he telephoned to me and carried on a conversation. I imagined that he was awake, but when I saw him later he had no recollection of telephoning to me. I then found out that he had laid down after dinner and presumably passed into one of his own sleeping affairs, for he was certainly asleep when he got up and asked where the telephone was and rung me up. Further suggestions under hypnosis that he would do certain things at a later hour when awake failed.

The following incident was of interest. Dr. E. A. Cockayne attempted to hypnotise the boy in my absence and was unsuccessful. I then told the patient that it was my wish that Dr. Cockayne should be successful and I went out of the room. The second attempt was also without success and Dr. Cockayne came to tell me so. After a moment we went into the room together and found the boy fast asleep and about to fall from the bed. The question arose whether he was under the influence of Dr. Cockayne or of myself, but neither of us was able to make the slightest impression upon him. Soon afterwards he woke up and sat on the side of the bed and spoke to us, and a moment later, in our presence but without a word of any sort from either of us, he leant forwards fast asleep and fell heavily, head first, on the floor. We were unable to waken him. Without speaking, I plunged pins into him and found him completely analgesic. Water thrown over him failed to rouse him, but when it was dropped from a height on to his face it was obvious that he appreciated it and shortly after he woke up. He was astonished, equally obviously, to find himself wet through and he told us that he had not felt the water at all. On another day very careful experiments, controlled by Dr. Cockayne, were made by me to produce blistering of the skin by suggestion. Dr. Hadfield described a series of successful tests of this nature in THE LANCET of Nov. 3rd, 1917. I failed completely to produce the slightest objective lesion by suggestion.

Treatment.

On July 2nd I told the boy that he was to resist my suggestions of sleep. For a time he was successful, finally passing into a sleep in which I had no influence over him. When he woke I told him that soon I should be quite unable to send him to sleep and I explained very carefully to him that as soon as he was able to resist my efforts he would also be able to resist his own suggestion to go to sleep. I told him that his own attacks had no relation to natural sleep and that although he did not recognise the fact it was obvious that his own attacks were the very rapid effect of a suggestion to sleep which had its origin in his own brain. On July 8th he was hypnotised, but not very readily, and strong suggestion was made that in the future he would always be able easily to resist my influence and also that he would have no difficulty in preventing his own attacks. The next day I failed entirely to hypnotise him, but a few hours later he went to sleep while leaning against the wall in another ward. When the attendant, who did not know him, went to rouse him the boy fell heavily on to the floor, still sound asleep. Thus the first part of my suggestion had proved successful, but not the second part, and I was now deprived of a useful means of communicating with him.

On July 10th he had a small operation on his nose for obstruction. The sleeping attacks recurred with some frequency. I made many further attempts to hypnotise him, but always without success, although I told him that for a special purpose I wished to be successful, and that I had reasons for retracting my previous statements. I was not able to get him even drowsy. He used to take pleasure in pretending that he was asleep, merely in order that he might watch my dismay. On July 25th he went to sleep during a game of cards, sliding off the chair and rolling under a bed. He retained his cards in their proper position between his fingers. For some weeks he took 90 gr. of bromide a day in deference to the opinions of those who thought that he might be epileptic, but the attacks continued without abatement, reaching a climax when he went to sleep in the barber's chair and resisted every attempt to waken

him made by a frightened crowd. This attack occurred on the day prior to the operation on his skull. On August 2nd he volunteered to assist an illusionist on a stage, and did so without mishap.

Operation.—On August 9th, after some preliminary stage management, his head was X rayed and he was told that at last the real cause of his illness had been discovered, and that an operation for the removal of a piece of thickened bone was necessary in order to effect a complete and permanent cure. At a demonstration of neurological cases I read out to the audience in his presence the notes of a similar but purely imaginary case, in which operation on the skull had proved successful. He agreed readily to my proposals and wrote home at once to say that a cure had been discovered, and to obtain consent to undergo the operation. On August 11th Dr. L. Horsley gave him some open ether and with Dr. G. H. C. Griffith's assistance I trephined the skull in the right parietal region and removed the disc of bone. The dura mater was healthy and was left alone. The bone was normal. Directly the patient came round he was shown the piece of bone and given it to feel, and he was told how successful the operation had been. The bone was drilled and suspended round his neck, where it remained for many months. He wrote his initials on it and also the date of the operation. An attempt to suggest anæsthesia by substituting scent for the ether was unsuccessful.

Subsequent History.

From the date of the operation his sleeping attacks ceased entirely and to all and sundry he admitted with great pride that he was absolutely cured. He did not relapse when I went on leave. On Sept. 12th the patient went on leave. He remained perfectly well at home. He was late in returning to duty on Oct. 2nd and he says that while sitting in the guard-room he dropped off to sleep and required some shaking before he was roused. There is some reason to think that this was not a recurrence but was assumed in order to lessen his punishment. In April, 1919, he was seen and examined in London. He was very pleased with himself and looked well and happy. He said that in December, 1919, he had gone to sleep at his work, but that it was natural sleep. He signed a paper saying that he was completely cured. Without any preamble I tried to hypnotise him and failed. In June, 1919, he was seen again. He remained perfectly well and had no headache. He said that he was still difficult to rouse in the morning and had lost a job through being late. Unfortunately counter-suggestion to this particular phase of his illness had been omitted.

With the two exceptions mentioned above, neither of which was a proved recurrence, the patient has remained perfectly well since his operation 18 months ago, and this in spite of the fact that his future was imperilled by a diagnosis of hysteria on his discharge papers, and in spite of the fact also that in March, 1919, he lost his trophy. Reports while he remained in the hospital and since his discharge agree that in his behaviour he has changed markedly for the better. He is now polite and thoughtful of others, whereas prior to his operation he was inclined to be selfish and bad-tempered. His expression reflects this change in his personality (see Figs. A and D). In July, 1919, the patient was shown before the Association of Physicians.

Frequently I have been asked why I actually removed a piece of bone, and my answer is that, having committed myself to the statement of the thickened bone, and having told the patient that its removal was necessary it was much in my mind that I must leave him with a definite, tangible depression in his skull to which he could point. It must be remembered that when these conversations took place the boy's future was at stake and a cure problematical. In the few cases in which it is necessary to be unscientific in order to cure hysterical symptoms it is necessary to be consistent.

For the same reason the boy was shown the piece of bone at the earliest moment of his recovery to full consciousness, and it was then that I realised that probably the cure would be made more certain if he could be persuaded to regard the bone as a precious possession. My reason to the patient for wishing him to wear it round his neck was that it would serve to remind himself and others that his skull had been operated on, but it is clear that the mental effect of constantly handling and showing off his treasure was likely to be the strongest possible suggestion against relapse.

The only other patient I have seen who at all resembled the above was a boy of 16 who went into trances, lasting as long as 24 hours. These all terminated in typical hysterical fits, in which opisthotonos was a constant feature.

Harley-street, W.

NOTES ON SOME OCCASIONAL MANIFESTATIONS OF MALARIA.

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MALARIA was the greatest of all causes of admission to hospital in Egypt during the recent campaign, and probably also in Salonika and Mesopotamia. The troops at Gallipoli were also heavily infected, and the Indian garrisons have suffered exposure to the same risk. There must therefore be in this country great numbers of men who have had malaria, and of these a proportion are certain to suffer from relapses. Probably every large hospital in the kingdom contains such cases, and recurrent ague is a complaint constantly heard at Pensions Boards.

The common phenomena of malaria are familiar enough, but there are other manifestations of the disease of rare occurrence, and although recorded in the text-books, they may not be referred to their proper cause unless their relationship to malaria is borne in mind. Such errors are to be regretted, because the symptoms are often alarming in character, but yield readily to proper treatment with quinine.

The following notes were made upon cases of this kind, which occurred in patients to whom attention was drawn by medical officers in charge of divisions and wards during routine visits to hospitals in Egypt. The majority of the symptoms are referable to the effect of the disease upon blood-vessels, generally with the production of hæmorrhage from mucous membranes and into solid organs; thrombosis is also to be met with, though less frequently than hæmorrhage.

Unusual Symptoms of Malaria in the Circulatory, Respiratory, Excretory, and Alimentary Systems.

Apart from vascular symptoms, disorders also arise in the circulatory, respiratory, and excretory

systems, which appear to be due to parenchymatous change, so far as it is permissible to draw pathological inferences from clinical observations. These, which form the smaller group, will be taken first.

Circulatory system.—Malaria is one of the many contributory causes of disordered action of the heart, and is liable to produce greater evidence of myocardial change than most of the others, definite increase in the area of cardiac dullness and valvular murmurs being more frequently found in malarial subjects than in those whose disability is due to uncomplicated physical strain, to neurasthenia, gas poisoning, or trench fever. The following are instances:—

CASE 1.—Private S. Well for three years on active service. One recent severe attack of malaria, T. 106° F. Well-marked dilatation of the heart.

CASE 2.—Private M. Two years' active service. Palpitations, præcordial pain. Poor exercise tolerance. Systolic murmur at the apex, pulmonary second sound increased.

CASE 3.—Private McC. Ill for four weeks with "clinical malaria." Systolic murmur at the apex and marked irregularity of the beat.

A group of 13 German prisoners of war was examined; all of them had received routine treatment with quinine for many months while with their units, but they had all suffered to some extent from malaria; four of them were found to be much wasted; four had definite physical signs of heart disease, and two others had disordered action alone.

Patients suffering from disordered action of the heart who have been exposed to infection should therefore be examined for major or minor relapses of malaria.

Respiratory system.—These observations were made while the influenza epidemic was prevalent in Egypt, and there were many cases in which differential diagnosis between influenza and malaria was impracticable. There is, however, no doubt that the latter was a very grave complication of the epidemic, and will require consideration in the event of any recurrence of influenza or during attacks of ordinary bronchitis in the winter. But, influenza apart, respiratory symptoms are by no means infrequent in malaria.

CASE 4.—Private B. Broncho-pneumonia and "clinical malaria." Areas of consolidation at left base and left apex. The fever was immediately reduced by quinine.

CASE 5.—Private Br. Three attacks of fever on alternate days. Fairly extensive general bronchitis. The fever subsided in three days under quinine.

There are records of congested lung bases in three cases of malignant tertian malaria seen within a few days of one another.

Excretory system.—The following notes are on four patients who were all in hospital under treatment for malaria, one benign, two malignant, and one not specified. As febrile cases, all were kept in bed and protected against risk of chill. None of them gave any previous history of nephritis, but all developed typical symptoms thereof without apparent cause.

CASE 6.—Private A. Malignant tertian malaria. Complained of headache and pain in the back, with albuminuria. The symptoms rapidly subsided under diuretics.

CASE 7.—Private P. Admitted ten days previously with diagnosis of influenza. Malignant tertian parasites were found in the blood. Symptoms of nephritis were observed, with albuminuria, but no casts.

CASE 8.—T. (P.o.W.). Admitted with benign tertian malaria. Responded well to treatment, but nephritis followed, with albumin and casts in the urine.

CASE 9.—Private W. Admitted with malaria. Profound pallor, œdema of the back and feet, oliguria with a trace of albumin.

Alimentary system.—In Egypt, intestinal disturbance, with diarrhœa, was extremely prevalent from many causes, so that one hesitates to ascribe such cases to malaria, but gastric trouble as a definite part of the febrile attack was very common. Anorexia with dry coated tongue is the rule, and vomiting is frequent. The following is an extreme case:—

CASE 10.—Private H. Three attacks of benign tertian malaria said always to have begun with vomiting. There was an uncontrollable attack of vomiting of two hours' duration while under observation, ending in grave collapse.

Cases of these kinds are examples of the protean character of malaria and of its capacity on occasion to attack any one of the great physiological systems, so that when unexplained symptoms arise in patients who have been exposed to this infection the possibility of relapse is worth consideration.

Vascular Lesions.

The following cases have a pathology more easily understood if it be granted that malaria has a definite effect upon blood-vessels. All the symptoms to be described are traceable to a vascular lesion of some kind.

CASE 11.—Private U., a malarial subject, had three hæmorrhages from the lungs in three days, losing a total of two pints of blood. No physical signs could be found in the chest, and the hæmorrhages ceased at once under treatment with quinine.

CASE 12.—Private W. Frequent attacks of malignant tertian malaria. Digestive system much out of order; tongue coated on dorsum, raw at the edges; pain after food, vomiting, and constipation. This patient had a record of profuse hæmatemesis of about a pint, followed by melæna.

CASE 13.—Private Y. Infected with malignant tertian malaria. Severe hæmorrhage occurred from the bowel, followed by discharge of pus. A diagnosis of infarct was made. The condition rapidly cleared up under quinine.

CASE 14.—Major J. S. Double infection with malignant and benign tertian parasites; suffered from a profuse hæmorrhage from the bowel. This patient had hæmorrhoids, one of which was probably the source of the bleeding; but, if malaria produces a liability to hæmorrhage, it is not remarkable that it should occur from a weakened site. The bleeding subsided rapidly with quinine.

CASE 14.—Private T. Twenty recurrences of malaria. In an observed attack the patient was ill for 12 days, with fever to 104·2°. He was intensely jaundiced for four days, and later was very pallid; he vomited blood and passed blood in the stools and urine.

CASE 16.—G. (P.o.W.). Admitted with malaria. Temperature became normal in three days and remained so for a week; it then rose again, swinging between 96° and 103°, the spleen became much enlarged, reaching the umbilicus, with a fluctuant spot near the sternal edge; this was punctured and grumous blood withdrawn.

CASE 17.—Private O. In this patient Dr. Margaret B. Dobson, ophthalmic specialist, demonstrated a sub-hyaloid hæmorrhage in the right macular region. She stated that though the condition was rare she had found several instances in malarial patients.

CASE 18.—Private G. Malignant tertian malaria followed by broncho-pneumonia. After subsidence of the fever thrombosis of (apparently) the left popliteal vein occurred, with œdema of the leg; the symptoms rapidly disappeared.

Cerebral Malaria.

The foregoing are clear instances of the occurrence of vascular lesions in malaria, and the most interesting and important of such lesions are those which produce "cerebral malaria," which is a condition clearly vascular in origin. The following are specimens:—

CASE 19.—Major W. Had had "fever" in Damascus a short time before admission to hospital, and had had some treatment with quinine for three weeks. Came into Egypt on leave, and was admitted to hospital in an anæmic condition and with slight evening fever; given gr. xxx. of quinine daily for ten days, and discharged on Nov. 22nd to a convalescent institution. Nov. 24th, an attack, transient left hemiplegia, which cleared up in two hours; readmitted to hospital. Nov. 25th, a "faint." Nov. 27th, a Jacksonian fit, patient recovered at once; a similar attack later, patient unconscious the rest of the day, but complete left hemiplegia and hemianæsthesia could be demonstrated. Given quinine, gr. xx., intramuscularly. Nov. 28th, still unconscious, but power had returned on the left side; no reflex change. Quinine repeated. Nov. 29th, irrational. Nov. 30th, fairly rational. Dec. 1st, quite clear, but a little "childish." Had seven doses of quinine into muscle in six days.

CASE 20.—Private C. Malignant tertian malaria. Nov. 15th, sudden left hemiplegia. Nov. 17th, violent, restrained with difficulty. Nov. 29th, queer in manner, unresponsive; the left face was weak, but the arm and leg could be moved normally. The left abdominal reflex was absent, and the left plantar variable. The deep reflexes were increased on the left. Improvement was maintained till evacuation.

CASE 21.—Ac. (P.o.W.) Malarial subject. Cerebral attack of three days' duration; unconscious, violent, incontinent; symptoms subsided under quinine. There is no record of paralysis.

CASE 22.—1. R. (Turkish P.o.W.). Cerebral malaria. Stuporose, roused with difficulty. No intelligence shown. Analgesia and partial hemiplegia on the right. Recovered completely with intramuscular quinine.

Another case, of which notes have not been preserved, was seen in France. The patient was admitted from another hospital on account of maniacal symptoms; after admission he was in a state of typical cerebral irritation, lying curled up and resenting any handling; a partial hemianalgesia and hemiplegia were found on the following day. Recovery was rapid and complete.

It will be observed that four out of five of the cases quoted were hemiplegic. Violence and irrational behaviour was more frequently noticeable in these patients than they are in cases of hemiplegia of the usual hæmorrhagic or thrombotic origins, and the recoveries are exceptionally complete. In view of the rapid recovery made by so many cases of patients with cerebral malaria it is improbable that they are as a rule caused by gross hæmorrhage, and post-mortem specimens are described in which small emboli of parasites are found in the cerebral vessels. But with hæmorrhage so readily demonstrated in such a variety of sites in many cases of malaria it is likely enough that cerebral hæmorrhages may occur.

It should again be emphasised that the cases described in this paper are exceptional, and form a small group among a very great mass of clinical material, but they demonstrate that malaria has a place, though a small one, among the hæmorrhagic diseases. Instances are given of bleeding from the mucous membranes of the alimentary, respiratory, and urinary tracts, into a solid organ like the spleen, and into the eye. It is not likely that this exhausts the list of possible sites, and no doubt many other observers could add to it.[1] Two cases of arthritis were observed in this series, one with effusion into a knee-joint; blood was not demonstrated in it, but its presence would not be remarkable, and it may well be that instances of bleeding into joints, or skin, or other solid organs has been observed. At any rate, hæmorrhage of any kind occurring in a malarial subject should be regarded as an indication for treatment with quinine.

When any of the grave complications of malaria occur the need for immediate and intensive treatment with quinine becomes urgent, and when a rapid action is required the choice lies between intramuscular and intravenous injection. Careful inquiries were made in Egypt among officers of long experience and sound judgment as to the best method. The great majority of them preferred the intramuscular method as being quicker and easier of administration, attended with less risk, and giving quite satisfactory results, like those in Cases 19 and 22. Major P. H. Manson-Bahr, D.S.O., R.A.M.C., advised against the intravenous method in field units, where many men arrive much exhausted and cardiac conditions are likely to be at their worst. Some officers at base hospitals, however, preferred intravenous injection. Major James Kerr, R.A.M.C. (T.), at Cairo, after 18 months' experience and having treated over 200 patients, strongly advocated this method as giving immediate satisfactory results. He used doses of 20 gr. in about 15 oz. of saline solution; this may be repeated once in the day, or even twice if the temperature does not fall, and is followed by oral administration. Intravenous injections are unsuitable in cases with cardiac and respiratory symptoms. The writer has a preference for this method in urgent cases, but it requires, of course, some degree of technical skill in administration.

In the general management of the problem of malaria, the prophylactic use of quinine was almost universally condemned in Egypt in spite of the pre-war experience of medical officers in India, the West Coast of Africa, and other malarial districts where prophylaxis is universal. Malarial subjects should be advised to take a calomel purge followed by quinine by the mouth *immediately* on feeling the slightest headache or malaise; by this method it appears that recurrences can frequently be aborted.

To assist clinical diagnosis of the infection, the presence of areas of hyperalgesia over the distribution of the 8th cervical and 1st dorsal, the 7th dorsal and the lumbar segments, or some of these, may be taken as a good rough indication that the patient is suffering from malaria, provided that trench fever infection can be excluded.

[1] See "On Hæmorrhage from the Bowel in Malarial Disease," S. F. Clark, R.A.M.C. Journal, 1904; "The Purpuric and Hæmorrhagic Type of Malaria," Castellani, Proc. Roy. Soc. Med. (Med. Sect.), July, 1917.

Surgeon Rear-Admiral Sir Robert Hill has been appointed a Knight of Grace of the Order of the Hospital of St. John of Jerusalem in England.

LIVINGSTONE COLLEGE.—The work of this institution, which trains missionaries in elementary medicine, surgery, and hygiene for stations situated abroad and far from medical aid, was interrupted during the war, the buildings having been used as an auxiliary hospital. In April last, however, the work was resumed. The report for 1918–19 states that during the 40 months that the College was requisitioned by the War Office more than 2000 patients were received. The College, the registered offices of which are at Leyton, E., is not self-supporting and an earnest plea is made for subscriptions. Dr. Loftus E. Wigram is the principal and secretary of the College.

A NOTE ON THE TREATMENT OF RECURRENT MALARIA AND MALARIAL RELAPSES.

BY HENRY FRASER, M.D. ABERD.,
LATE DIRECTOR, INSTITUTE FOR MEDICAL RESEARCH, FEDERATED MALAY STATES.

RECENT publications in THE LANCET have shown wide divergence of opinion on the treatment of malaria, so that medical men who are not familiar with the disease would find it difficult to determine the line of treatment which should be adopted. I have seen cases where heroic doses of quinine have been given in the belief that a cure would be effected. The subsequent history has shown that this is not so. In other cases quinine has been given in such minute doses as to be valueless; and cases of tertian malaria have been seen with three and four relapses, quinine having been withheld, it was stated, until the temperature should become normal.

During the period January, 1918, to July, 1919, observations and investigations have been carried out on 8000 soldiers who have been sent back to England on account of malaria contracted in one or other of the theatres of war. The majority of cases were studied in the Southern Command concentration camp for cases of malaria, the minority in the 3rd Southern General Hospital, Oxford, and the Kitchener Hospital, Brighton.

On arrival in England men infected with malaria parasites are not in most instances really ill unless they are suffering from a disease additional to their malarial infection. Many are debilitated and in poor condition, but it is surprising how rapidly they improve with the change of climate, change of diet, and adequate treatment. Men who have been some time in England, and whose condition is not complicated by other disease, do not present a debilitated appearance unless they are the victims of inadequate treatment and inadequate or improper diet. The disheartening thing to all of them is the occurrence of relapses. All of them have had quinine, many of them have had it in large amounts. Practically all of them dislike it, more especially in solution; any faith they have ever had in the value of quinine as a cure for malaria has been severely shaken. Yet quinine is undoubtedly the remedy for malaria. Observations have been made with various other drugs, including the ring compounds of arsenic. The results were not satisfactory. None of them is of the same value as quinine.

The primary attack of malaria is often severe, more especially when the disease is contracted under the conditions which so frequently occur on active service. The patients may then be unable to absorb quinine, and it is necessary to have recourse to intramuscular or intravenous injections, but in England when dealing with relapses these methods of medication are unnecessary.

When the tongue, as an indicator of the condition of the gastro-intestinal tract, is kept clean intolerance to quinine is not observed. Men have stated that they either could not take quinine or could not take it in solution. In no instance have their statements been verified. Time and again I have proved to the men the inaccuracy of their observations and that they can take quinine in solution with beneficial results. Tablets of quinine are not a satisfactory form of medication. Tablets are more pleasant to take than quinine in solution, but with them evasion is so much easier and is so commonly practised that they should not be employed in hospital treatment. No man can relapse during the period that he swallows 15 gr. of quinine sulphate in solution once daily. Smaller doses are not sufficient, and it is better to give the amount in one dose rather than in divided doses. Fifteen grains of quinine taken daily can do no harm to any man infected with malaria parasites. If the case does relapse the man is either not swallowing or not absorbing the quinine.

It has not been determined how long the continuation of treatment is necessary. It was not found practicable to continue the treatment beyond 28 days in hospitals or concentration camps for malaria. All that was accomplished was to demonstrate to the men that they were not invalids, and that with proper treatment they could be kept in health. It is advisable to continue the treatment for as long as possible, pointing out to the men that failure to do so will be followed by a relapse. The interval between the completion of 28 days' treatment and the occurrence of a relapse varies from several days to several weeks.

The ordinary hospital diet is excellent, and all that is required for uncomplicated cases of malaria. Indeed, if an adequate dietary could be ensured and arrangements made for the routine administration of quinine under supervision the vast majority of the men would be better out of hospital and engaged in work. Nothing conduces more to hospitalism than the admission of a man to hospital every time that he has a relapse, or his retention in bed after his temperature has become normal.

In the absence of treatment or in cases inadequately treated relapses are observed. In these cases 15 gr. of quinine sulphate in solution should be given twice daily for five days and thereafter 15 gr. once daily. A rigor cannot be aborted, and if the first dose be given when the temperature is rising vomiting may occur. The first dose should be given when the temperature is falling—that is, in the sweating stage. No patient suffering from a relapse without complications, who is treated in this way, will show a rise of temperature subsequently to the fourth day.

No importance is attached to the use of tonics, such as iron and arsenic. Where they have been given it has been in deference to the wishes of the men.

An alarming complication is the occurrence of blackwater fever. Fortunately the incidence of this condition is not high. Seven cases were observed. All of them recovered. In these cases quinine was withheld while the urine was abnormal. In all of them the temperature rose after the blackwater had disappeared. Quinine was then given and continued for as long as the patients were in hospital.

ROYAL PORTSMOUTH HOSPITAL.—The financial resources of the Royal Portsmouth Hospital are considerably strained, the expenditure being nearly £100 a week more than the income, due to the great advance in the cost of every-day necessities. To place the institution in a better position an appeal is being made for a contribution of 1*d.* a week from those engaged in the various business establishments in the town. It is hoped by this means to increase the income by over £10,000 a year.

CONGENITAL DISLOCATION OF THE HIP:

NOTE ON A METHOD OF DEALING WITH REFRACTORY CASES.

BY A. H. TUBBY, C.B., C.M.G., M.S. LOND.,

CONSULTING SURGEON TO THE WESTMINSTER, ROYAL NATIONAL ORTHOPÆDIC, AND EVELINA HOSPITALS.

WE are now well acquainted with the anatomy of congenital dislocation of the hip, and we are cognisant of the relative importance of the various structures affected. As the patients grow older we realise that some of them tend to perpetuate the dislocation and are definite obstacles to reduction. Therefore, we overcome the resistance of the pelvi-crural group of muscles by section of the pelvic attachments of the adductors and the hamstrings, or by rupturing their tendons just below the symphysis pubis. The pelvi-trochanteric or the gluteal and ilio-psoas group of muscles are of less importance, because it has been shown that in early life they do not undergo much shortening and contraction. In adolescence, however, the shortening of the limb and the elevation of the points of insertion of these muscles into the femur or the fascia lata cause so much contraction of them, that they become distinct obstacles to successful reduction of the dislocation, and require stretching before it can be accomplished.

Very important is the ilio-psoas in the pelvi-trochanteric group. We may disregard the short muscles, such as the obturator internus, the pyriformis, and the quadratus femoris; and our

FIG. 1.—To illustrate the open operation for reduction of refractory cases of congenital dislocation of the hip. (A drawing made by Mr. E. Rock Carling at the time of operation.) A, The dislocated and anteverted head of the femur, covered by the outer part of the capsule. B, The inner portion of the capsule, adjacent to the acetabulum. Between A and B the capsule has become constricted by the ilio-psoas tendon, which has become a suspensory ligament of the body-weight. C, The ilio-psoas tendon. D, The rectus femoris muscle.

attention should be concentrated on the ilio-psoas muscle, a powerful structure, and so placed that it exerts a great influence on the shape of the capsular ligament. In congenital dislocation of the hip the ilio-psoas muscles and tendons undergo important changes in direction. As the combined muscle-tendon crosses the brim of the pelvis it is displaced outwards, and it passes closely beneath the anterior inferior spine. It then winds outwards and backwards to its insertion, compressing the capsule about its middle, and is responsible for the hour-glass shape of that structure, so often seen in cases of congenital dislocation in children of over 4 years of age (see Fig. 1). In effect, it stretches from its vertebral origin to the trochanter minor like a sling and on it the pelvis rests, so that it becomes a suspensory ligament for the body-

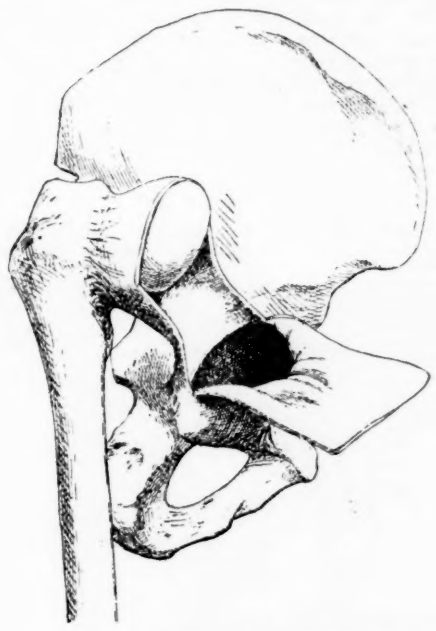


FIG. 2.—Curtain-like narrowing by the hour-glass capsule of the entrance to the acetabulum. (Cabot.)

weight. As age advances, the ilio-psoas muscle and tendon become more hypertrophied and thick; they compress the capsule of the hip-joint more closely about its middle, and the latter becomes not only hour-glass shaped, but its anterior wall is so folded inwards and backwards as to obscure the entrance to the acetabulum like a curtain (see Fig. 2). This constriction of the middle of the capsule is by no means an insuperable obstacle to reduction in early life, for the condition is that of the infolded finger of a glove, and a very slight distending force acting through the caput femoris is capable of opening it out. As time passes, however, the narrowing or hour-glass contraction of the capsule increases, for it is compressed from below and in front by the ilio-psoas tendon; and as the head of the femur is displaced more and more upwards and backwards on the ilium, the anterior and inferior portions of the capsule approach the posterior and upper portions. By continuous narrowing the aperture leading from the outer portion of the distended capsule into the true acetabular cavity may be reduced to a small button-hole. And in still more marked cases the anterior layer of the capsule blends with the remains of the soft tissues of the floor of the acetabulum. The cavity is thus obliterated, its site being covered over by the outspread attachments of the anterior layer of the capsular ligament.

Having thus briefly outlined some of the chief difficulties in reduction, I am desirous of relating how they have been overcome by open operation.

I may say that no matter what the age of the patient may be, no resort is made to open operation until every effort has been made to reduce the dislocation by the manipulative methods. In one instance, no less than eight such unsuccessful attempts were made, and only then was I compelled to devise this new method of operation. Portions of the adductors had been exsected, extension had been tried by heavy weights for several weeks, traction by pulleys up to the danger-point had been used; and even when the trochanter major had been pulled down one inch below its normal position we found that flexion, hyper-extension, abduction, circumduction inwards and outwards were all unsuccessful.

The following details of the operation in question were founded upon a knowledge of the parts played by the ilio-psoas tendon and the hour-glass contraction of the capsule:—

Operation.

An incision 10 cm. long was made from the anterior inferior iliac spine downwards and inwards.

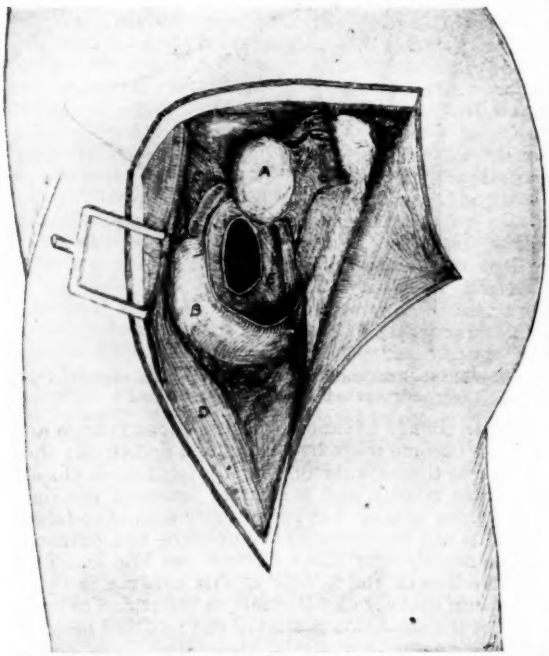


FIG. 3.—A stage, further than in Fig. 1, of the open operation. The capsule has been opened, the anteverted head of the femur exposed, and the ilio-psoas tendon divided. A, The anteverted head of the femur. B, The inner portion of the capsule. C, The cut ilio-psoas tendon. D, Rectus femoris muscle. E, The button-hole aperture in the diaphragm, forming the outer wall of the inner part of the capsule. (From a drawing by Mr. E. Rock Carling.)

The sartorius and tensor vaginæ femoris were separated from each other and held apart; and, in order to give more room, the latter muscle was cut across in a backward direction. It was quite simple then to expose the thickened hour-glass capsule. This was then opened by a crucial incision over the head of the femur, external to the constriction. By everting the head of the femur the narrow button-hole-like entrance into the acetabulum could be felt and seen, and the tight ilio-psoas tendon defined. In fact, it was found in several cases that an almost complete diaphragm separated the outer from the inner parts of the capsule, and effectually prevented the entrance of the head into the socket (see Fig. 3). I am convinced that no amount of force which could be safely employed would have pushed the head through that button-hole.

However, the remedy was simple: an old-fashioned hernia knife was used as a tenotome, the constriction of the capsule and the ilio-psoas tendon was freely divided, and with a little traction on the limb the caput femoris slipped easily into its socket. The crucial incision into the capsule was then sewn up, and the limb put up in plaster in the fully abducted position. The result was entirely successful.

Emboldened by this case, I have been able to advance the age for operative reduction of the hip from seven years onward, until the latest successful case occurred in a girl aged 15 years. We cannot expect to reduce every hip no matter at what age we meet it, and we shall see cases in adolescent life which defy us; nevertheless, I would urge that no case should be considered hopeless until the manipulative method has been given a trial and has failed; and then free section of the capsular diaphragm and of the ilio-psoas tendon and, if need be, of the quadratus femoris, should be done. Then, and only then, can we regard the case as one which is intractable and incurable.

If it were not for the danger arising from the proximity of the anterior crural nerve and of the superficial and profunda femoris arteries, I believe that section of the important structures indicated might be effected by a subcutaneous tenotomy. In those difficult cases where there is anteversion of the head and neck of the femur it seems to me that, after reduction of the head into the acetabulum, osteotomy of the femur below the trochanters can safely and justifiably be combined with the operation on the ilio-psoas tendon and on the capsule. In order to secure apposite union of the femur after the osteotomy, plating of the fragments should be carried out and the limb be put up in plaster in abduction of 45 degrees.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A CASE OF HERPES ZOSTER

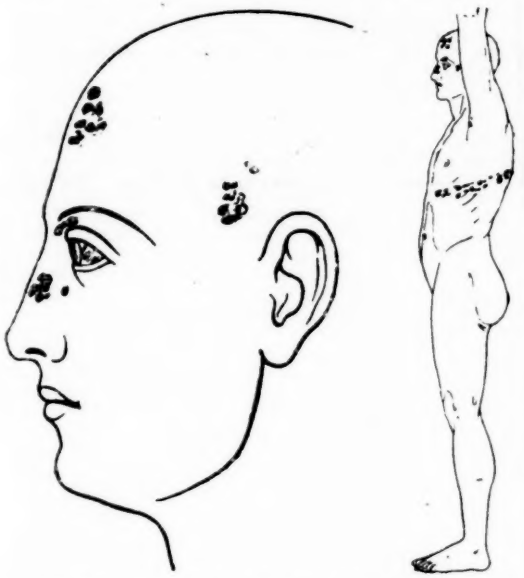
INVOLVING SIMULTANEOUSLY THE THORAX AND THE OPHTHALMIC DIVISION OF THE FIFTH NERVE.

BY H. W. BARBER, M.B., B.C.CANTAB., M.R.C.P.LOND.,
PHYSICIAN IN CHARGE, SKIN DEPARTMENTS, GUY'S, PRINCE OF WALES, AND EVELINA HOSPITALS.

THE case here recorded is one of undoubted herpes zoster involving both the thorax and the ophthalmic division of the fifth nerve. I have never seen this combination before, and Sir Cooper Perry tells me that he has never met with a similar case; it is unlikely that my patient is unique, but I have been unable to find any record of true zoster of the face and trunk occurring simultaneously.

Ivy T., aged 6, attended my out-patient department at Guy's Hospital in August of this year for an eruption on the left side of her chest and on the upper part of the left side of her face. The mother stated that the child had seemed unwell for a day or two, and had complained of a feeling as of "pins pricking her" in her left chest. This feeling was followed on August 2nd by the appearance of the eruption in this situation. Two days later a similar eruption appeared on her forehead.

nose, eyelid, and temple on the left side. When I saw the patient there was quite typical herpes zoster encircling the lower part of the front chest, corresponding apparently to the seventh dorsal segment. There was little evidence of secondary pyogenic infection of the herpetic vesicles, but the glands in the lower part of the left axilla were considerably enlarged and



very tender. The child said she had less pain than just before the eruption appeared. On the left side of the face there were grouped herpetic lesions on the forehead in the course of the supra-orbital nerve, on the side of the nose, on the upper eyelid, and on the temple, as seen in the figure. The preauricular glands were markedly enlarged and tender. The conjunctiva of the left eye was reddened and injected, but no actual vesicles were seen either on the conjunctiva or cornea. The conjunctiva of the right eye was normal in appearance. The child said that she had had some pain on the left side of her forehead and in her left eye, but it was not so severe as that in her chest. When seen by me the child's temperature was normal, but the mother said that she had been "feverish" before the rash appeared.

On Sept. 11th the lesions had all healed, but superficial pitted scars were visible both on the chest and at the sites of the lesions on the face. No history of chicken-pox either in the child herself or amongst her relations and companions was obtained.

Though I can find no record of true zoster occurring simultaneously on face and trunk, involvement of more than one root ganglion on the same side, and very occasionally on the opposite side (bilateral herpes), has been described. Zoster may occur in myelitis, in tuberculous caries of the spine and ribs and from involvement of the posterior root ganglia with new growth (Head and Campbell), in syringomyelia, in syphilitic meningomyelitis, in tabes, and may also apparently be induced by the taking of arsenic internally. But everything points to the majority of cases being due to an acute infection of the posterior root ganglia, and in zoster of the face to infection of the Gasserian ganglion. The infective organism may be the same as, or similar to, that responsible for acute anterior poliomyelitis. The identity of this organism, however, does not seem to have been established with certainty, although Rosenow and others claim to have isolated from the tonsils of infected patients a streptococcus which showed an elective affinity for the central nervous system of rabbits and guinea-pigs, producing in them the lesions of poliomyelitis. Sajous considers, from a study of Rosenow's work, that herpes zoster may also be due to a streptococcal infection, the tonsils or gums being the most likely sites of entry. Both in anterior poliomyelitis and in herpes zoster an increased cell-count in the cerebro-spinal fluid has been found.

One of the most interesting accompaniments of an eruption of zoster is the constant enlargement and tenderness of the neighbouring lymphatic glands. That this is due to secondary infection of the herpetic vesicles with pyogenic cocci is certainly not true, since the glands may be enlarged and tender before the appearance of the rash. In one case I was able to predict an attack of zoster owing to the distribution of the pain complained of by the patient and to the accompanying glandular enlargement; the rash appeared within 24 hours of my seeing the case.

The explanation of the glandular involvement is not clear; it seems hardly likely that it depends directly on the inflammatory changes in the posterior root ganglion. It is possible that the infecting organism of the disease might be isolated by excising or puncturing one of the enlarged glands.

REMOVAL OF A COIN-CATCHER THROUGH ŒSOPHAGOSCOPE.

BY JOHN W. HARRISON, L.M.S.S.A. LOND.,

CONSULTING SURGEON, EAR, NOSE, AND THROAT DEPARTMENT, ST. JOHN'S HOSPITAL, LEWISHAM; LATE CLINICAL ASSISTANT, THROAT DEPARTMENT, ST. MARY'S HOSPITAL, LONDON.

THE following case may be of interest in view of recent papers in THE LANCET. A coin-catcher, impacted in the gullet, was successfully removed through the œsophagoscope, and recovery ensued in spite of perforation into the pleural cavity. I am indebted for the notes, apart from those of the actual operation, to the doctor who was in charge of the case at St. John's Hospital, Lewisham.

F. G. D., aged 3 years, was admitted to St. John's Hospital, Lewisham, on July 8th, 1913, with a history of having swallowed a halfpenny four days previously. The X ray revealed a coin impacted half way down the œsophagus. The child looked ill and was unable to swallow. Temperature 100·2° F., pulse 114. A coin-catcher with a winged swivel end was introduced by a local practitioner, and although the coin could be felt it was not found possible to extract either it or the coin-catcher. Further attempts to remove the instrument under an anæsthetic were unsuccessful. The child had been on the operating table under the influence of an anæsthetic for more than two hours when I first saw her and she was very collapsed. I passed a Hill's œsophagoscopic tube of suitable size, proximally illuminated by a Brünings's combined handle and lamp, the tube engaging the protruding whale-bone shaft of the coin-catcher. There was some difficulty in getting the instrument through the post-cricoid pharynx and mouth of the œsophagus, owing to the large amount of blood-stained and frothy saliva present, which made vision difficult. Having passed the œsophagoscope into the gullet, I removed the obscuring secretions as well as possible by suction and continual swabbing; the wall of the gullet was found to be lacerated, tongue-shaped pieces of mucous membrane being visible. The distal end of the coin-catcher was seen; the wings were separated at an increased angle and were crushed together by Irwin Moore's forceps, so that the subsequent removal of the instrument was simple. I did not see the coin, which had doubtless been released and pushed downwards

by the previous manipulations. The child was very collapsed and was given a rectal saline, and instructions were left that she should be fed in the same way as long as possible.

On the fifth day after the operation the child's temperature rose to 103°, pulse 148, and dullness on both sides of the back was noticed from the base of the lung to about the fourth dorsal vertebra. The following day the temperature dropped in the morning to 98·6°, but rose again in the evening to 102·6°, the pulse varying between 120 and 140. On the following two days the temperature rose to 103·8° and 104·2° respectively. The child looked ill and had dyspnœa, but no difficulty in swallowing liquid food consisting of milk.

On July 18th—that is, 10 days after the adventure with the coin-catcher—a needle was introduced on the left side in the sixth intercostal space, and some fluid, somewhat hastily presumed to be pus, was withdrawn. A part of the sixth rib was resected, and large quantities of milky whitish fluid, containing some coagulum, was let out. A drainage-tube was inserted and the following day the child's temperature dropped to 100·2°, pulse 146, respirations between 40 and 50. The fluid which was withdrawn was examined and found to consist almost entirely of milk. The bacteriological examination showed that there were no pathogenic organisms present, and that it contained only lactic acid, bacteria, and yeast. For the following week the temperature varied between 97·6° and 101·4°. On July 27th the temperature dropped to normal, and from thence onwards only once rose above 99°. The drainage-tube was removed on August 10th, and the child discharged in perfect health on Sept. 8th. The coin was evacuated in the normal way two days after the operation.

Amongst the many points of interest in this unusual case attention may be particularly directed to:—

1. The dangers of blind instrumentation in general, and the employment of the coin-catcher in particular, in a hidden region like the gullet.

2. The obvious advantage of the œsophagoscopic method, and the unjustifiability of resorting to other methods. It is wiser and safer to leave the foreign body alone until the œsophagoscope can be employed. Delay is surely less dangerous than blind surgery.

3. The possibility of recovery, even in an infant of 3 years, in spite of the wall of the gullet having been completely torn through, provided the escape is into the pleural cavity and not the mediastinal tissues.

4. The advisability of leaving a feeding-tube in for several days when there is a possibility of traumatic rupture in an adult. It is doubtful whether an infant would tolerate it.

5. The curious fact that the pleural cavity was free from septic organisms, although milk in considerable quantity had passed into the cavity through the perforation in the gullet and pleura. The rise of temperature must be attributed to lesions outside the pleural cavity.

A MEETING representative of all phases of Lancashire life was held in the Town Hall, Manchester, on Dec. 9th in support of the appeal made by the University of Manchester for £500,000. The Archbishop of York urged that the conception of university life should not be conditioned by a purely commercial outlook. Subscriptions promised and received amount to £70,618.

AT the last meeting of the Ottery St. Mary Urban Council a farmer successfully applied for the payment of an account for £15 to the Honiton sanitary authority, for treatment in the isolation hospital of a person living on his farm and suffering from diphtheria. He maintained that he should not have been asked to pay this sum, as it was the duty of the Ottery St. Mary Council to provide an isolation hospital. The council decided to pay the £15, and the decision to provide an isolation hospital was announced.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

SECTION OF SURGERY: SUBSECTION OF ORTHOPÆDICS.

EXHIBITION OF CASES AND SPECIMENS.

A MEETING of this section of the Royal Society of Medicine was held on Dec. 2nd, Mr. E. MUIRHEAD LITTLE, the President, being in the chair.

Cases of Deformity.

Mr. H. A. T. FAIRBANK showed one of Multiple Congenital Deformities in a boy aged 11 years. There was bilateral talipes equinovarus and dislocation of both hip-joints, accompanied by posterior subluxation of the left shoulder-joint, which was irreducible. Extension of the right elbow-joint was limited, a bridge of skin stretching from arm to forearm. Bilateral flexion of the wrist and claw fingers were present. The metacarpo-phalangeal joints were extended and the interphalangeal joints flexed. Sensation was normal. All the limbs were very thin and the musculature feeble. In the arm all muscles reacted to faradism except the extensors of the wrist. The left shoulder condition was interesting, as it was similar to that seen after birth palsy, but it was regarded as developmental on account of being associated with so many true congenital deformities.

Mr. FAIRBANK showed another case of Multiple Congenital Deformities in a boy aged 4 months. There was limitation of extension of the left elbow. In the left hand there were dorsiflexion and ulnar deviation, neither of which could be corrected at first. In the right hand palmar flexion accompanied slight ulnar deviation. The left hip was dislocated, the left knee was rigid, and the patella absent. There was bilateral congenital equinovarus. The deformities of the hands and feet were yielding to treatment.

Mr. R. C. ELMSLIE showed a case of Congenital Deformities of All Four Limbs, the head, neck, trunk, and abdomen showing no deformity or wasting. The upper limbs hung at the sides with elbows extended, forearms in a position of mid-pronation and wrists flexed, the whole limb being rotated in. The pectoral muscles appeared well developed, but the deltoid and posterior scapular muscles were much wasted; the muscles of the upper arm seemed moderately well developed, but those of the forearm and the intrinsics of the hand were very small. The wrist was flexed to a right angle and the fingers were held extended. The right and left arms were very similar in appearance and in the mobility of the joints, but the left was slightly smaller and shorter than the right. Movements were much limited. Many muscles were weak. In the lower limbs both hips were dislocated dorsally. The right knee was fully extended and could not be flexed voluntarily. The left knee was fully extended, and could be flexed and extended voluntarily through a small angle. The feet were in a position of equinovarus deformity, partly corrected by operations. All the muscles of the lower limbs were very weak, the right side being the worst. Knee-jerks could not be obtained. Electrical examination was difficult and incomplete. The only muscles which gave a good normal response to the faradic current were the triceps; the pectoralis major and the deltoid gave a very feeble response of normal type; the forearm extensors on the left gave a just perceptible response; no response to a faradic current was obtained in the other muscles of the upper limbs. X rays showed a doubtful dislocation of the shoulder. The head of the radius was dislocated forward. There were five carpal bones at the wrist. The hips were dislocated dorsally. The knees were normal.

Mr. FAIRBANK showed a case of Mr. G. E. Waugh's in which the arms were normal to the elbow-joint, beyond which there was one forearm bone and one digit. The forearm was shortened and acutely flexed. X rays showed absence of the radius. One

carpal bone and the phalanges of one digit were present. The patient could feed himself by holding a spoon between the forearm and arm. There was nothing abnormal in the family history.

Sterno-mastoid Tumour.

Mr. FAIRBANK showed a case of Sterno-mastoid Tumour in a girl, aged 4 months, born by Cæsarean section. A hard fibroid mass was present in the lower part of the right sterno-mastoid. There was no torticollis. Dr. Hubert Roberts had kindly furnished notes of the birth of the child. The mother was extremely ill, with vomiting, convulsions, albuminuria, and finally coma. Cæsarean section was performed to save her life, and in this the operation was successful. The head was tightly engaged in the pelvis, and considerable difficulty was experienced in extracting it. In Dr. Roberts's opinion injury to the sterno-mastoid was more likely to occur in disengaging the head from the pelvis by the slightly twisting movement necessary than by contraction of the uterine muscle during removal of the child.—Mr. LAMING EVANS thought the case might be one of congenital shortening of the sterno-mastoid, as it was difficult to account for such a degree of shortening by embolus. The muscle seemed to be more like tendon than fleshy belly of muscle.—Mr. P. B. ROTH said that he had found that simple movements prevented wry-neck.—Mr. FAIRBANK thought there was little muscle shortening. The condition was under treatment.

Malformation of Femur.—Multiple Exostoses.

Mr. W. ROWLEY BRISTOW showed a case of Congenital Malformation of the Right Femur, with deficient growth of that bone, in a child aged 3 months, which had been at first regarded as a united intra-uterine fracture. The child was born with the knee flexed. The mother was extending it gradually and the condition was now improving, and he thought the child would ultimately be able to walk with a high patten.

Mr. BRISTOW also showed a case of Multiple Exostoses in a girl aged 16 years, involving both shoulders, wrists, hips, and ankles. There was lack of growth at the epiphysis of one ulna; only half the epiphysis of the ulna was present. There was displacement of the head of the radius on the same side.

Mr. LAMING EVANS said that in one case he had removed the exostoses from the inside of the knee in order to allow the patient to grip the saddle. Unless the exostoses interfered with work it was inadvisable to remove them.

Arthritis of the Knee.

Mr. LAMING EVANS showed the case of a girl of 17, who, at the age of 2, developed an Arthritis of the Right Knee, in which flexion was the prominent symptom. Since that time she had been treated in several hospitals and by various methods, without reduction of the flexion deformity. A recent slip necessitated rest in plaster of Paris in a general hospital. The knee was now flexed at an angle of 20 degrees, a fibrous ankylosis permitting 2 to 3 degrees of movement. X ray examination showed the epiphyseal cartilages to be synostosed, and a translucent area was present in the external condyle which suggested an old abscess. The joint line was hazy, and showed a marked obliquity downwards and inwards from collapse of the external condyle. Mr. Evans thought that conservative treatment by splints had been carried out too long in this case, and advocated excision of the ends of the femur and tibia with a view to correcting the flexion and obtaining a firm bony ankylosis.—The PRESIDENT agreed that it was a case of caries sicca, with deformity of the head of the tibia. He thought that the joint ought to be excised and the limb put up in the extended position.—Mr. ELMSLIE spoke of the results of excision of the knee-joint, and said that out of 100 children in the L.C.C. physically defective schools, on whom this operation had been performed by surgeons of the highest standing, the results had been very bad. Hoffmeister had laid down certain rules in these cases. Excision under 9 years of age, he said, was unjustifiable; under 14 years of age it should only be done as a limb-saving operation. After that age the operation was a good one.

Mr. ELMSLIE showed a case of

Suture of Median and Ulnar Nerves in the Forearm,

with recovery. The patient was a girl, aged 16, who cut her wrist by falling through a window in July, 1918. The tendons were sutured at the time and the ulnar artery tied, but the nerves were not united. She was first seen by Mr. Elmslie in the following September. There was a cruciform incision above the wrist, the transverse scar (due to the injury) being about three inches above the joint; the longitudinal scar was that of the operation. All the long tendons were acting satisfactorily, but all the intrinsic muscles of the hand were completely paralysed; the hand was clawed, the metacarpo-phalangeal joints being hyper-extended, the inter-phalangeal joints flexed. Anæsthesia to light touch included the whole of the palmar surface of the hand, the front of the ulnar side of the forearm as high as the transverse scar, the back of the ulnar half of the hand, the whole of the dorsal surface of the little and ring fingers, the last two phalanges of the index and middle fingers, and the last phalanx of the thumb. On the next day the longitudinal scar was excised and the median and ulnar nerves were explored; the ends of the median nerve were found displaced laterally from each other by about three-quarters of an inch; the ends of the ulnar nerve were continuous through a strand of fibrous tissue, which was about 1½ in. long. The nerve ends were freshened and sutured, the median meeting easily, the ulnar only with some tension when the wrist was flexed. After the operation the wrist was kept flexed for six weeks, and this joint and the fingers were then slowly extended on a splint. To counteract the tendency to clawing of the hand, and to produce a palmar arch, an egg splint was used for some time. Treatment by daily massage and galvanic stimulation of the intrinsic muscles was commenced as soon as the wound was healed, and as soon as voluntary power returned re-educational exercises were added. The forearm muscles were treated by faradic stimulation throughout. At the present time there was an almost complete return of sensation to light touch in the whole of the affected area. All the intrinsic muscles responded to a faradic stimulation, and all showed some voluntary power; the ulnar muscles recovered more slowly than the median, and the interossei were still weak. The hand was now a natural shape, there was a palmar arch, and the fingers could be flexed at the metacarpo-phalangeal joints, whilst the interphalangeal joints were extended. Opposition of the thumb was good. The circulation in the hand was now satisfactory; throughout the winter of 1918–19 it had been very poor, the fingers being constantly blue and shiny. The pads on the last phalanges were now returning.

Traumatic Myositis Ossificans.

Dr. W. T. GORDON PUGH showed a case of Traumatic Myositis Ossificans following dislocation of the elbow. About eight weeks previously the patient, a boy aged 15, while playing in a gymnasium, caught his foot in a mat and fell sideways on to his hand, dislocating his left elbow. This appeared to have been readily reduced without an anæsthetic; cold compresses were applied and the arm slung in a flexed position. About a fortnight later, finding that any attempt at movement caused great pain, the doctor moved the joint under chloroform and put the arm in a straight splint. For a few days the elbow was flexed and extended several times each morning, but gradually the movement possible became less and less in extent and more painful. When he was admitted to hospital a few days ago the arm was found fixed within 40° of full extension and the forearm fixed in a position midway between pronation and supination. There was considerable swelling around the elbow due chiefly to a firm thickening extending from the olecranon upwards for about 3 in., and to a similar thickening in front of the joint. X ray examination showed considerable areas of opacity in positions corresponding to the triceps, brachialis anticus, and notably the supinator longus. The history was that usually associated with traumatic myositis ossificans, and the treatment would

be to secure absolute rest so as to cause the development of new bone to cease and that already formed to be absorbed. It was advisable to place the elbow in the standard position, and he asked for opinions as to whether this should be done at once under an anæsthetic, or gradually by means of a hinged splint. He also wished to hear the experience of others as to the final result in cases so well marked, and as to how long it would be before the patient might actively use his elbow to restore movement.—The PRESIDENT considered that the boy would never regain the use of his elbow, and he would therefore put the limb up in the best position for use.—Mr. ELMSLIE thought that there was a considerable chance of improvement, because the bone was open and light and cast little shadow. He would fix the arm in its present position, as any movement would increase bone formation.—Mr. FAIRBANK agreed that the arm should be left alone in order not to increase bone formation.—Mr. ROTH said that he advocated bending the arm to a right angle under an anæsthetic, and putting it up in that position. He would not wait for the bone to absorb, and thought that the very slight movement of bending the joint would cause little increase in bone formation, and the arm would be in a useful position. The case was one which afforded an opportunity for pointing out the mistakes which still appeared in text-books of surgery as to the treatment of inflamed joints. It was most important that they should be put at rest until the inflammation had disappeared.—Mr. LAMING EVANS said that the X ray picture showed a displacement of the tip of the olecranon. He thought that the arm should be fixed in its present position, as any movement would increase hæmorrhage and bone formation, and tension of triceps would pull the epiphysis further from the shaft of the ulna.

Dupuytren's Contracture.

Mr. ROTH showed a case of Dupuytren's Contracture following injury in a man aged 31. He was wounded in January, 1916, with a rifle grenade splinter in the ring and little fingers of the left hand. There were two small flesh wounds. After a month the wounds were healed, though there seemed to have been some suppuration. In the following December the patient "began to feel something tight pulling down his fingers," and they became bent towards the palm. This had got gradually worse, and the little finger was now flexed at its proximal interphalangeal joint to a right angle and could not be straightened, whilst the ring finger was flexed at its metacarpo-phalangeal joint to 45°, the interphalangeal joints not being affected. There was a very prominent ridge in the palm, due to the contracted palmar fascia, which led up to the base of the ring finger, to which the skin was adherent. A smaller and less defined ridge led up to the base of the little finger. The points of interest were the manner of causation, the rapid onset, the youth of the patient, the treatment to be adopted, and the fact that the right little finger had been contracted ever since the patient could remember. Mr. Roth suggested that organisms of suppuration had gained entry to the prolongations of the fascia on the ring and little fingers, and spread down them to the palm and set up a septic fibrositis in it. He preferred to adopt Adams's operation performed in the manner he described, and followed by bandaging the fingers in nearly complete extension to a malleable iron splint.—The PRESIDENT said that he was doubtful whether the wounds had had anything to do with the condition. He thought that Adams's operation was tedious and uncertain.—Mr. P. MAYNARD HEATH said that he would remove all the palmar fascia.—Mr. ELMSLIE said that many recurrences were due to insufficient operation, some of the deep palmar fascia being left behind.—Mr. BRISTOW urged the importance of after-treatment.

Scoliosis of Uncertain Origin.

Mr. MAYNARD HEATH showed a case of Scoliosis of uncertain origin. The patient was a girl aged 10 years, who fell in the playground in 1918. The accident was apparently trivial, but no details were available. Very little notice was taken of it, and the child was not incapacitated. Some months later the mother noticed that the back was not straight. Examination in the erect posture showed that there was very little abnormal to be seen, but when the spine was flexed the whole trunk was carried markedly to the left. At the same time some rotation occurred, so that the right lumbar region became prominent, and a secondary curve, convex to the left, was produced in the dorsal region. Flexion of the spine directly forward or to the right, actively or passively, was impossible. There were no nervous symptoms, and the condition was not progressive. The hip-joints and lower limbs were normal, and there were no signs of abscess formation. The deformity of the spine was obviously due to some lesion in the lower lumbar vertebræ. X rays showed that the articular processes between the fourth and fifth lumbar vertebræ on the left side were apparently fused into a structureless mass of dense bone, and that the fourth lumbar vertebra was set obliquely on the fifth. No fracture of the articular processes could be seen. There was a deficiency in the laminæ of the fifth lumbar vertebra and its left transverse process was longer than its right and came in contact with and was possibly joined to the left lateral mass of the sacrum. The bodies of the vertebræ were normal in outline and no rarefaction of bone was visible. The X ray appearances might be due to fracture, congenital abnormality, or caries. If the cleft in the laminæ of the fifth lumbar vertebra were due to fracture, it was possible that the articular processes between the fourth and fifth lumbar vertebræ were fractured and had subsequently fused. The slightness of the accident was somewhat opposed to this view. On the other hand, the increase in size of the left side of the fifth lumbar vertebra was clearly developmental and suggested that the cleft in the lamina of that vertebra and the condition of the affected articular processes were also developmental. Caries was considered to be unlikely in view of the symptoms and X ray appearances. The child had been treated for six weeks in a plaster jacket by another surgeon. Since then she had been given exercises and massage with improvement in her comfort and general health, but without any influence on the deviation of the spine.—The PRESIDENT thought that the scoliosis was functional.—Mr. LAMING EVANS, Mr. A. S. BLUNDELL BANKHART, and Mr. ELMSLIE also discussed the case, Mr. Elmslie suggesting that, as the condition might possibly be one of caries, the spine should be kept at rest, in spite of the absence of pain. Mr. HEATH, in the course of his reply, said that he considered caries to be impossible, as the condition had been stationary for months.

SECTION OF PATHOLOGY.

A MEETING of this section of the Royal Society of Medicine was held on Dec. 2nd, Professor W. BULLOCH, the President, being in the chair, when Dr. F. A. TEALE read a paper on the Relation of the Antitryptic Titre of the Blood to Bacterial Infection Anaphylaxis.

Exhibition of the Abdominal Viscera of an Infant.

Dr. B. H. SPILSBURY showed the Abdominal Viscera of an Infant who died three days after birth. There was a congenital defect of the large intestine, which was completely occluded at the splenic flexure. Behind the occlusion the large intestine was distended with thick meconium and its wall was hypertrophied. The upper part of the small intestine was distended with similar material. Beyond the occlusion the large intestine was of normal development and contained a little colourless mucus. The normal bowel was adherent to the occluded end. The specimen also showed general antenatal peritonitis, with partial organisation and with fine but fairly firm adhesions between the viscera. In the midst of the adhesions were found masses of dry, yellow, cheesy material, which was gritty from commencing calcification. The masses consisted of altered meconium, and they pointed to an antenatal perforation of the distended intestine as the cause of the peritonitis, with subsequent closure of the perforation. There was no indication in the wall of the bowel of the site of the perforation. The liver and spleen were covered with a layer of organising lymph, and a microscopical specimen was shown of the liver in which a group of simple

glands lined with goblet cells and resembling the normal glands of the large intestine were seen on the surface of the lymph. It was suggested that these glands had developed from the intestinal epithelium which had escaped with the meconium into the peritoneal cavity, and, becoming transplanted upon the developing granulation tissue, had reproduced the intestinal glands in that situation. Microscopical preparations were also shown of peritoneal nodules obtained from two cases of mucocele of the vermiform appendix. The nodules consisted chiefly of mucin containing columnar epithelial cells arranged regularly in rows and exhibiting a tendency towards the formation of glands. The mucin was surrounded and penetrated by a vascular and cellular stroma. It was suggested that the nodules were produced by the transplantation on the peritoneum of intestinal epithelium which had escaped owing to the rupture of the mucocele in each case.

A specimen was also shown of a mucocele of the vermiform appendix with a recent perforation at its base; the patient died during the operation for its removal.

MEDICAL SOCIETY OF LONDON.

THE TRUE NATURE OF MULTIPLE EXOSTOSES.

A MEETING of this society was held on Dec. 7th, Mr. V. WARREN LOW, the President, being in the chair, when Professor ARTHUR KEITH read a paper on the True Nature of Multiple Exostoses. He said that he had had opportunities of studying the X ray records of four cases of multiple exostoses, and from his study had come to the conclusion that the disease should be definitely removed from the category of tumours and placed among the disorders of growth under the name—suggested by Mr. Morley Roberts—Diaphysial aclasis. The exostoses, which attracted the attention of clinicians to the presence of this disease in patients, were merely secondary results which masked one of the most remarkable of all disorders of growth. His attention had been drawn to the nature of the underlying condition by certain X ray plates which were taken in France by Captain J. A. Annan in the spring of 1918 and sent to England to be added to the War Office Collection in the Royal College of Surgeons.

In Case 1 they had been taken from a private in a labour battalion, aged 20, who had been diagnosed in the 3rd Canadian General Hospital as suffering from multiple exostoses, and subsequently discharged as unfit. The lower ends of this man's femora and the upper and lower ends of the shafts of his tibiæ represented an arrest of bone development of a peculiar kind—one which was to be anticipated if John Hunter's teaching concerning the growth of bones was correct. John Hunter was the first to perceive that the shafts of the long bones grew by a double process; in the first process new bone is laid down at the extremities of the shaft in the diaphysial lines; in the second, which Hunter named the "modelling process," the cancellous bone laid down on the diaphysial line is rebuilt, trimmed, and gradually converted into an architectural part of the shaft. In diaphysial aclasis the pruning or modelling process is arrested; hence between the properly formed part of the shaft and the epiphysial end there is interposed an irregular cylinder of imperfectly modelled bone, on the surface of which there are several outgrowths. Further investigation of the first case showed that the diaphysial ends of all the bones of the body manifested a similar disturbance of growth, the disturbance being greatest at the lines where growth is most vigorous and prolonged.

For the X ray plates of Case 2 Professor Keith was indebted to Captain Lionel West, who forwarded them to the War Office Collection early in the present year. They were taken in Prees Heath Military Hospital from a soldier, aged 26, 5 ft. in height. The X ray plates showed the same growth disturbance at the diaphysial ends of all the long bones. As in the first case, the inequality of growth between the bones of the forearm had led to a dislocation of the proximal end of the radius.

The X ray plates of Case 3, that of a soldier, aged 29, in Fulham Military Hospital, were taken and sent to the War Office Collection by Dr. Florence Stoney. In the first and second cases only imperfect family histories could be obtained; in Dr. Stoney's case one brother and four maternal uncles were affected with the same disorder; it was probable that there was a family history showing a Mendelian hereditary incidence in the majority of cases.

For the full records of Case 4 Professor Keith was indebted to Mr. W. Rowley Bristow. The case, that of a girl aged 18, was particularly valuable because Mr. Bristow had obtained two sets of X ray plates, the second taken ten months after the first, and in such a way that the one set was strictly comparable to the other. By a close comparison of the two sets of plates it had been possible to work out the exact nature of the growth changes which had taken place in a period of ten months. The changes thus observed were totally different from those which occurred at the diaphysial ends in normal growth.

For Case 5 he was indebted to his colleague Professor Shattock, who brought to his notice a case of multiple exostoses represented in the museum of St. Thomas's Hospital by the bones of the upper and lower extremities. Although the disease was not uncommon, the case preserved in St. Thomas's Hospital Museum, that of a short adult man of unknown age, but probably well over 30, who committed suicide by throwing himself in front of a railway train, was the only skeletal representation of the disease in London. Professor Keith was thus able to check his interpretations of the X ray plates by a study of actual specimens of the disease.

A Clue to the True Nature of the Disease.

A clue to the true nature of multiple exostoses (diaphysial aclasis) was given by noticing its incidence on the skeleton. Bones formed in a membranous basis, such as those of the face and vault of the skull, were not affected, nor were the bones formed in cartilage, such as the epiphyses of long bones, the vertebræ, sternum, carpal or tarsal bones. It was only where these two processes—membrane formation and cartilage formation—came into juxtaposition in the formation of bones that this peculiar disorder of growth occurred. Hence the disturbance was most marked at the growing ends of diaphyses of long bones, and was most emphatically marked where growth was greatest. In the upper extremity the proximal end of the humerus and the distal ends of the radius and ulna showed a much greater growth disturbance than the shafts which end at the elbow-joint. In the lower extremity growth was greatest at the diaphysial ends directed towards the knee, and there the disturbance was greatest, but as there is also considerable growth at the proximal end of the shaft of the femur and at the distal ends of the tibia and fibula these parts also exhibited ample evidence of the disease. The growing margins of the os innominatum and scapula, particularly the vertebral border of the latter bone, showed irregular formation with the production of exostoses. The clavicles showed a disturbance at both extremities; in the ribs the alterations occurred at the growing costo-chondral junction. At all these sites two different kinds of bone formation are in progress; as bone is laid down within the growth disc (epiphysial line) in cartilage a covering of fibroblastic bone is being deposited by the growing margin of the overlying periosteum. We had been so in the habit of concentrating our attention on the process of ossification which takes place in the cartilaginous growth disc that we had left out of sight the equally important growth processes which go on in the ferrule of periosteum which surrounds the growth disc; consequently we were not prepared to encounter a dislocation in the harmony with which these two processes ought to proceed in health. In achondroplasia the arrest of growth was a partial cessation or a retardation of the growth process which goes on within the cartilaginous disc; in diaphysial aclasis the arrest or retardation lay

in the growing edge of the periosteal ferrule. Hence it came about that large areas of cartilage-formed bone laid down at the ends of the shafts of long bones were left exposed. A comparison of plates taken from subjects showing different degrees of disorder in the growth and architecture of bones made one quite certain that this arrest of periosteal formation was not permanent but temporary. The modelling process, which is attended by the deposition of periosteal bone, went on for years after all growth in length had ceased.

A Definite Disorder in the Disc Growth.

Although the chief lesion lay in a delay in the extension of the periosteal ferrule which surrounds every cartilaginous growth disc, yet it was legitimate to infer that there was also a definite disorder in the growth disc itself. The exact nature of that disorder could only be revealed by a study of the microscopical appearances of the growing ends at various stages of the disease. As seen in X ray plates growth discs of the shafts of the long bones had the same irregular notched appearance as in late rickets, to which disease diaphysial aclasis presented several points of resemblance. In normal development the margin of growing bone, through a mechanism we had not yet discovered, exercised a most definite influence on the cartilage cells of the growth disc. The manner in which the cartilage cells divide and group themselves in ranks placed so that they are enfiladed by the ingrowing osteoblasts was well known. It was possible, however, that the prime movers in the normal process of ossification were not the bone cells but the cartilage cells. It might be that the primary changes occurred in the cartilage cells, and as a consequence of these changes there took place an invasion of the cartilage territory by the bone cells. It was also possible, as many believed, that the cartilage cells actually became bone cells. The essential lesion in achondroplasia was a failure in the preliminary transformation of the cartilage cells at the growing edge of the diaphysial disc. Experiments on the thyroid had failed to produce achondroplasia and microscopic examination had revealed no change in the thyroid gland in cases of that disorder of growth, nor had thyroid medication any influence on the growth of those who were the subjects of the disease. Yet the disordered growth in the subjects of achondroplasia had so many resemblances to the growth disturbances seen in cretins that one might safely group achondroplasia as a growth disturbance due mainly to an alteration in some of the functions of the thyroid body. If we agreed to place achondroplasia in that group we must also place diaphysial aclasis there too, for the growth disturbances were related, although of opposite types.

Light thrown on the Mechanism of Growth.

The study of growth disturbances were of interest to all medical men, but especially to anatomists, because they gave opportunities of discovering the very complex mechanism concerned in the growth of the human body. Diaphysial aclasis was primarily a disturbance of growth discs and of both the cartilaginous and periosteal elements comprised within these discs. Giantism and dwarfism in all their forms involved disturbances in growth discs and disordered function on the part of the glands of internal secretion. In diaphysial aclasis the stature was stunted; it fell from four to eight inches (10 to 20 cm.) short of the stature that might have been anticipated if the growth had been normal. When adult years were reached growth ceased both in the diaphyses as well as in the diaphysial exostoses; the retarded modelling process, on the other hand, still went on. Although the exostoses usually became evident at or soon after the period of puberty, a review of all the evidence indicated that diaphysial aclasis is congenital in origin, but in only severe cases were there manifest signs of the condition before the eighth year. It was not unusual to find exostoses springing from near the middle of the shaft of a long bone—the site of the diaphysial end in the first or second year after birth. Multiple enchondromata formed a distinct but allied disorder of growth. The disorder was attended by several curious results. In more than a third of the cases on record the growth at the distal end of the ulna failed, while that at the distal end of the radius continued. The result was that the radius became bent into a bow, the ulna serving as its stretched string. Under the stress of growth the proximal end of the radius became dislocated and might detach with it the external epicondyle from the humerus. There was only a slight disparity of growth between the tibia and fibula, but in the majority of cases the diaphysial extremities of these two bones became fused and firmly ossified together. Further clinical observation would probably show that in diaphysial aclasis there were disorders of other systems of the body besides the bony one. The conception of multiple exostoses as a growth disease was not a new one. John Hunter emphasised its constitutional nature; Paget recognised it as an ossific diathesis due to some morbid condition of the blood. Several German writers had recognised it as a disturbance of growth. (A full account of Prof. Keith's investigations will be published in the forthcoming number of the *Journal of Anatomy*.)

Mr. LAMING EVANS showed X ray plates of four cases.

Dr. B. H. SPILSBURY read a paper on the Medico-Legal Significance of Hæmorrhage.

SCOTTISH SOCIETY OF ANÆSTHETISTS.—A meeting of this society was held in the Hall of the Faculty of Physicians and Surgeons, Glasgow, on Nov. 29th, Dr. Paton Boyd, the President, being in the chair.—The President read his inaugural address upon the Value of Chloroform as an anæsthetic. He stated he desired to bring the subject before the meeting owing to the extreme attitude taken up by the American school of anæsthetists. In the report of the Committee on Anæsthesia of the American Medical Association in 1912 it was stated: (1) that the use of chloroform as an anæsthetic for major operations was no longer justifiable owing to the danger of delayed chloroform poisoning; (2) that for minor operations also the use of chloroform should cease, nitrous oxide and oxygen taking its place; (3) that chloroform was sometimes convenient for inducing anæsthesia in alcoholic or other difficult subjects. While giving all credit to the American school for their valuable work, Dr. Boyd considered this attitude was extreme, if not absurd. There were many cases to whom it was impossible to administer ether, particularly certain abdominal cases where the necessary relaxation could not be obtained except by chloroform. He agreed, however, that it was safer to initiate anæsthesia with nitrous oxide and ether, or ethyl chloride and ether, and that it was really undesirable to use chloroform for short cases where nitrous oxide and oxygen would suffice. Ready made mixture of chloroform and ether he did not use; if he desired to exhibit both drugs together he allowed them to mix only upon the mask. He was a believer in Levy's dictum that in giving chloroform the first principles are to keep the patient fully anæsthetised and to make the administration continuous. Above all, he considered the safety of anæsthetics depended more upon the man who was giving them than upon the exact drug or method chosen.—In the general discussion which followed the common opinion seemed to be that chloroform should not be administered unless really necessary, but that it frequently was necessary and might then be given with very reasonable safety so long as sound principles were followed.—Dr. J. S. Ross opened a discussion upon the Teaching of Anæsthetics. New methods, such as open ether, vapour and rectal oil, ether and gas oxygen in its modern developments, and the intra-tracheal method, had all proved their value, and the whole subject of anæsthetics had been illuminated by the work of Crile upon anoci-association. The increased knowledge should lead to a higher general level of anæsthetising, but he was not sure that it had done so to the extent which it ought. The special anæsthetist in many schools had not been given the status necessary to enable him to influence work done in the institution, all of which was not necessarily under his own eye. As regards when and how the subject should be taught he favoured simple lectures, given to the student as soon as he begins his practical surgical work. The personal supervision of administration could not, unfortunately, always be done by a specialist. Since it seemed to be impossible that the specialist should personally teach every student, he ought to concentrate upon teaching a limited number of students very thoroughly, the students selected for this advanced training being those who were in the running for resident posts.

Reviews and Notices of Books.

MIND AND ITS DISORDERS.

By W. H. B. STODDART, M.D., F.R.C.P. Third edition. London: H. K. Lewis and Co. 1919. Pp. xx. + 580. 18s.

IN his preface the author writes:—

"Since the last edition I have fundamentally changed my attitude towards mental disease. ..... Mental disease can only be understood by studying the psychology of the unconscious mind of patients, and the physical manifestations of a functional nervous disorder must be regarded as secondary, not primary, as I taught in the first edition."

Dr. Stoddart has, in short, taken over the Freudian system in its entirety, and the result, so far as this edition is concerned, is a curious jumble. For instance, on one page "The Psychoses," which are set forth as including dementia præcox, are said to "have no morbid anatomy," though some pages later the physical stigmata and anatomical changes of dementia præcox are described in detail.

Again, "the cortical paralysis" and "slight double hemiplegia" associated by the author with "intra-neuronic intoxication" in cases of melancholia go strangely with such ætiological factors as "parental fixations" and "repressed homosexuality," which, "with repressed maternal instincts" and "unsatisfied sexual desire," are said to be "at the root of" the manical-depressive psychosis. Dr. Stoddart has evidently not yet managed to throw off old associations or wholly to accept his own doctrine as to the only method of understanding mental disease.

In a section on Instinct there appears the following:—

"Instincts are developed for the benefit of the race. Occasionally, however, we come across an uncorrected instinct, as in the case of the lemming, which periodically attempts to migrate in its thousands from its native valleys in Norway to the long-submerged continent of Atlantis: the result is that thousands of these animals are drowned in the sea."

We wonder if the author when he tells us of this migration is writing, as the setting of the story would suggest, very much in earnest, or whether we have here an example of ponderous and inapposite humour. There are many similar perplexities before the reader. We may cite a couple.

"The supposedly accidental breakages by domestic servants supply another example of unconscious wish fulfilment. The servant would never admit, even to herself, that the breakage was intentional; but it gratifies some unconscious wish, such as reduction of labour, tending to equalise the property of herself and her employer, personal revenge, or some such kindred unconscious desire."

The second example is even more striking. In young children who voluntarily retain their fæces,

"Psycho-analysis reveals this instinct to retain the fæces to be the first attempt at economy, for such persons invariably grow up thrifty and methodical."

The naïve and ready acceptance of such pronouncements will prepare the reader for the phallic significance of Zeppelins, aeroplanes, and bombs, and for the doctrine that neurasthenia, as described by the author—

"Is always due to partially or completely repressed auto-eroticism. It is in conformity with this observation that the disorder quite commonly dates from the renunciation of masturbation."

The author, so far as he reveals himself in this book, shows a fine taste for the novel, a placid facility in belief, some share of the confusion which so commonly prevails between hypotheses concerning phenomena and the more matured conclusions of prolonged research, and an unfortunate penchant for certain unpleasant phases of thought. The doctrine comprised under the term psycho-analysis requires treatment from a very different source; a more critical analysis and a less imaginative synthesis might place it in a position to command respect. The work before us is likely to be of interest for certain advanced psychologists investigating particular aspects of medical and literary mentality, but we doubt its value for practitioners or students. It at any rate teems with contentious matter, metaphysical, psychological, and medical, while the controversies it might excite would, no doubt, be heightened in interest by the varying character of the theses that are presented.

1. GROUNDWORK OF SURGERY.

For First-year Students. By ARTHUR COOKE, M.A., F.R.C.S. Cambridge: W. Heffer and Son. 1919. Pp. 189. 7s. 6d.

2. MINOR SURGERY AND BANDAGING.

By GWYNNE WILLIAMS, M.S., F.R.C.S. London: J. and A. Churchill. 1920. Pp. 447. 10s. 6d.

1. IT is more difficult to write a book on general principles than it is to write a treatise for advanced students. It is by no means easy to break new ground and write in a new way on such a subject as general surgery. In the book before us Mr. Arthur Cooke, surgeon to Addenbrooke's Hospital and a teacher in surgery in the University of Cambridge, has not shirked these difficulties, and his effort to break away from tradition is a bold one. The work is intended for students starting the study of surgery, for whom a text-book is too big and too complex. Surgical text-books, he says, to a large extent follow regional lines, with the result that the average man is lost in a maze of local lesions. The author hence abandons this old method of classification. His classification is based on the fact that nearly all the diseases and abnormalities of the body are due to one or more of the following causes: (1) Infection by some form of micro-organism or parasite; (2) injury; (3) deformity; (4) degeneration and tumour formation. We find this system far more reasonable and scientific than the traditional regional one which the author has discarded. Instead of a picture obscured by detail, the new dresser gets a bird's-eye view of what surgery may come to mean for him, and some hint of the ideals at which he is to aim. We cordially approve the writer's initial idea, which is well carried out with regard to infections, to which nearly one-half of his book is given up. Infections are considered according as they are introduced by injuries or via the mucous membranes of the air-passages, of the alimentary canal, and of the genito-urinary tract—an excellent method of approach to the subject. Injuries, deformities, and new growths receive less detailed description, and it may be that they do not readily lend themselves to the same treatment. It is satisfactory to note, however, that many of the lessons learnt during the war are included in the author's teaching—as, for instance, the treatment of accidental injuries by early excision of the wound and the use of blood transfusion. The book concludes with short chapters on Prophylaxis and Preventive Treatment, and the Time Factor in Surgical Treatment. A sentence from each of these chapters may be quoted to show the author's freshness of outlook:—

"If prophylaxis by serum could be adopted for all important infections, the work of the surgeon in connection with these would be much reduced."

"The passing away of those mothers of the present generation who think themselves competent to treat abdominal pain by castor oil will bring about another fall in the mortality."

Mr. Cooke's book is an experiment, but an experiment based on sound principles. We feel assured that any student who grasps these principles will have an excellent foundation of knowledge on which to build.

2. This is the seventeenth edition of a book originally produced by Mr. Christopher Heath 59 years ago. Its exceptionally long life tempts the critic to essay an analysis of the reasons for its success, for it must have proved useful to have withstood the test of time. It may not be devoid of interest to compare the system of teaching as it existed at the time of the earlier editions with that of the present day, for though, as the preface states, the book has been thoroughly revised and to a certain extent rearranged, it still retains a reminiscence of the nineteenth century.

The book, though not at all a large one, is a perfect mine of information dealing with a thousand and one details, such as sterilisation of hands and gloves, bandaging, methods of cutting strapping, lumbar puncture, amputation of fingers and toes, measurement of limbs for artificial splints, and administration of anæsthetics. This subject matter and the type of illustrations are well known, for they have figured in books of this sort for many generations. After reading it there is left a feeling of dissatisfaction, not because the subject matter is wrong or badly set out, for this is not so. The reason seems to be that this type of book is not founded on any scientific method of teaching, nor does it enunciate any particular principle. It consists of a mass of facts and points of technique. In other words, it is a craftsman's handbook, and for those who desire such a book an excellent one.

THE ESSENTIALS OF CHEMICAL PHYSIOLOGY.

By W. D. HALLIBURTON, M.D., LL.D., F.R.S. Tenth edition. London: Longmans, Green, and Co. 1919. Pp. 324. 7*s*. 6*d*.

THE revision of a text-book of chemical physiological chemistry is constantly called for, so rapid are the advances made, in theoretical and practical directions. A book without reference to these developments is useless. Professor Halliburton may well be trusted to realise this, and we can appreciate the great difficulty which he has experienced in revision due to the necessity of adding new material without rendering the book awkwardly bulky This has been overcome "by judicious excision of matter no longer necessary." The book thus provides a well-planned practical course consistent with progressive working detail. The paragraphs dealing with new material are clearly and ably written, preserving the traditions of a text-book on the essentials of chemical physiology, which has been rightly valued as a laboratory companion since it was first written in 1893.

PRACTICAL PHYSIOLOGICAL CHEMISTRY.

By SYDNEY W. COLE, M.A. Fifth edition. Cambridge: W. Heffer and Sons, Ltd. 1919. Pp. 401. 15*s*.

WE welcome a new edition of this excellent practical book. Throughout its pages we find evidence not only of laboratory experience but of the adaptation in a revised and sometimes enlarged form of fresh methods approved by that experience. In regard to the newer and less familiar tests and methods, the directions are not copied from elsewhere, not even (when they are due to others) from the description of their originators. Professor Gowland Hopkins in his foreword bears witness to the fact that the author has always a first-hand acquaintance with his subject. The instructions, he says, "have been written at the laboratory bench, step by step with the successful accomplishment of the process they describe. When success has seemed doubtful, or too difficult, of attainment, the method has found no place in the book." That is precisely the impression that a reviewer with a knowledge of laboratory work would obtain by looking through the experimental directions given. They are thorough and clear, but the general plan is not confined to the course in practical physiological chemistry outlined at Cambridge for medical students, but opens up suggestive lines of work on the great problems of animal nutrition generally. The chapter on the preparation of amino-acids is a case in point. We have no hesitation in commending this work to beginners and post-graduates alike who are drawn to the study of the questions involved.

THE YOUNG PHYSICIAN.

By FRANCIS BRETT YOUNG. London: W. Collins, Sons and Co. 1919. Pp. 485. 7*s*.

"The Young Physician" in so far belies its title that only half-way through does the hero, reluctantly enough, drift into the study of medicine, and only on the last page does he qualify. Since the last few chapters are among the most interesting, to us at any rate, the sudden end would be disappointing were it not so indefinite as to suggest a sequel in due course. Not in this respect alone does Major Brett Young show that he belongs to the modern school of novelists; his hero starts life as the ubiquitous introspective boy "with interesting eyes," and his bourgeois origin as the legitimate son of a chemist alone differentiates him from others we have met. His school days,—the age of terror until he hits the bully,—his passion for reading, and instinctive avoidance of the sleek master who seeks his confidence, the chapter headed Impurity—all these differ in no marked respect from the adventures of the same small boy in other novels, but the pictures of the school itself and its surroundings are unusually vivid.

When an incompatible father suggests "North Bromwich" Medical School instead of classics at Oxford the boy cannot frame his objections and reluctantly acquiesces, and accordingly we follow him through the normal life of a medical student. The work, from the preliminary sciences to hospital posts, is described in some detail, and it is probably our familiarity with the curriculum that prevents us from being more interested. The mental attitude of each year is indicated accurately enough, especially the sentimental pride in professional skill which attacks the casualty dresser and from which he happily recovers under the brisk common-sense of the sister in the wards. The hero passes through the stage of disgust at the callous rude manner of his chief, changing to adoration of this great man who can do no wrong, and later on we note the usual healthy reaction from the somewhat unbalanced zeal and top-heavy ideals to the more obvious duty of reading for examinations. It is not always easy to recognise in the developing medical student the sensitive youth of the commencement. Near the end, however, we re-discover him, for the thought of his father's second marriage to an unknown lady is so abhorrent that he decides to leave home and keep himself for his final year as best he can.

During the uncongenial work of assisting at a poor-class dispensary he is involved in a drama that might have been treated as a problem of medical ethics, but we have instead conventional melodrama, and the curtain comes down on the hero qualified, and engaged as a ship's doctor, with the hope that the sea breeze may remove the taste of unpleasant experience.

Occasionally through the story the author reaches such a high level as to make us anxious to see more of his work, but it is the pictures rather than the psychology that impress us.

BEVERAGES AND THEIR ADULTERATION.

By HARVEY W. WILEY, M.D. With 42 illustrations. London: J. and A. Churchill. Pp. 422. 21*s*.

Dr. Wiley is insistent that this book was not written for the scientific investigator "but for the average, sober-minded, reasonably well-educated American citizen, who is daily taking a greater interest in what he eats and drinks." So far we think it will fulfil his purpose, and the author has evidently made a careful avoidance of highly technical language. The subjects dealt with are of general interest, extending to the wines of France, Spain, Portugal, and Germany, but a good proportion of the beverages described are only familiar in the United States. Then again, the references to the laws controlling adulteration are entirely to American legislation, which in many respects is not on all fours with the Food and Drugs Acts of this country. The American views of food, drink, and drug questions are well worth studying, but the English reader must remember the scope of the work. The opening chapter is on "Waters," for Dr. Wiley writes: "water is the typical beverage, and in the hope of its coming into more general use it occupies the place of honour in this volume." No one will object to this sentiment.

THE late Adam Thomson Nisbet, M.D., C.M. Glasg., died at St. Ishmael's, Newton Abbot, Devon, on Nov. 19th, in his fifty-fifth year. The deceased was on the honorary staff of the Newton Abbot Hospital and was one of the best known and respected medical men in the district, where he had been in practice for many years.

FRENCH SUPPLEMENT TO THE LANCET

Under the Editorial Direction of

Professor CHARLES ACHARD, PROFESSOR OF PATHOLOGY AND THERAPEUTICS IN THE UNIVERSITY OF PARIS.

AND

Dr. CHARLES FLANDIN, D.S.O., CHEF DE CLINIQUE A LA FACULTÉ DE PARIS.

FRENCH WORK ON ICTERO-HÆMORRHAGIC SPIROCHÆTOSIS.

By MARCEL GARNIER,
PHYSICIAN AT THE LARIBOISIÈRE HOSPITAL, PARIS.

THE investigations on ictero-hæmorrhagic spirochætosis carried out by Japanese authors were made known in France by a paper published March, 1916.[1] Analyses of a series of German investigations on the ætiology of Weil's disease appeared at the same time.[2] But MM. L. Martin and A. Pettit draw attention to the fact that, whilst their work confirmed the results of the Japanese, the German writers were unaware of the researches made by the latter, or at least they did not refer to them. At the meeting of the Société de Biologie held on July 22nd, 1916, MM. Martin and Pettit reported their own results obtained on inoculating guinea-pigs with the virus supplied by Dr. Adrian Stokes, which that author had isolated from European soldiers attacked with infectious icterus on the French front. MM. Martin and Pettit acquainted the medical public[3] with the work of the Japanese authors, giving a description of the parasite, and drawing the attention of medical men to this new morbid entity.

Circumstances were particularly favourable to the study of the forms of infectious icterus. Indeed, jaundice had become quite common since the outbreak of the war. Being at that time stationed at the central hospital at Bar-le-Duc, I had charge of a department in which all the cases of jaundice occurring in the army holding the Verdun front were concentrated. We always had a large number under treatment, nearly a hundred at a time. Consequently, we were able to study the various clinical forms of infectious icterus; we were struck by the frequency of the recurrence of febrile attacks following on a phase of temporary freedom, and had applied the name of *infectious icterus with febrile recurrence*[4] to these forms. We were well aware that it was the malady previously described in France by M. Mathieu under the name of *benignant hepatic typhus*, and which was described some months later by Weil in Germany. The infectious nature of certain slight forms of jaundice was, of course, familiar in France since the work of Landouzy (1883) and Chauffard (1885).

The three first cases of ictero-hæmorrhagic spirochætosis noted in France were reported by MM. Martin and Pettit at the meeting of the Academy of Medicine, April 10th, 1916. Later on S. Costa and J. Troisier published three more, whilst M. Garnier related 4 cases and E. Renaux added 32 more observed on the Belgian front. From that time onwards there was a rapid increase in the number of investigations. They are mentioned in the book on ictero-hæmorrhagic spirochætosis published at the beginning of 1919 by MM. Martin and Pettit. Finally, a whole number of the *Journal médical français* (April, 1919) is devoted to ictero-hæmorrhægic spirochætosis. We propose to study the contributions to the knowledge of the new disease made by French medical men, reviewing successively the ætiological diagnosis, the clinical types, the pathological anatomy and physiology, the ætiology, and finally the treatment of the malady.

DIAGNOSIS OF SPIROCHÆTOSIS.

Spirochætosis can be diagnosed by various means—by inoculating guinea-pigs with blood, urine, or cerebro-spinal fluid; by seeking for the parasite directly in the urine; by studying the humoral reactions: amboceptor, agglutinin, and the like.

1. *Inoculation of Guinea-pigs with Blood, Urine, or Cerebro-spinal Fluid.*

The Japanese authors showed that on inoculation of the blood or urine of patients attacked by infectious icterus the disease was transmitted to the animal. It seemed necessary to us to ascertain at what particular point of the development these liquids were virulent. In the case of the blood the Japanese authors found it virulent up to the end of the first week; we ascertained that this is indeed the case within the limits determined, and on the 1st and 2nd days after the jaundice has appeared. As soon as the icterus has developed completely and the fever has dropped the inoculations remain consistently negative.[5]

Urine, on the other hand, is not contagious till later. According to our investigations[6] virulence is only rarely observed from the 8th to the 15th day of the illness, whilst it is frequently observed from the 15th to the 23rd. This is the moment when the spirochæte is eliminated; but as this elimination is not continuous the urine is not constantly virulent. This explains why our results differ from those obtained by the Japanese authors. Indeed, according to Ido, Hoki, and Ito urine taken from the 10th to the 20th day gives a positive result once in three times, exactly the same as that taken during the first 10 days. But the contradiction is only superficial. As a matter of fact, the Japanese injected urine from the same patient several times without on each occasion comparing results obtained by direct examination with results obtained by the inoculation. Now the spirochæte may be found in the urine both before and after the 10th day, and though elimination is more frequent after the 10th day than before it, it does not take place every day, even after that date. The discrepant nature of the results obtained can therefore be easily understood. In order to get exact information the urine which is to be injected must itself be examined. Since the blood is no longer virulent from the time that the icterus is completely developed, and the urine only becomes so several days after its establishment, it is obvious

[1] Journal of Experimental Medicine, vol. xxiii., No. 3, March 1st, 1916. [2] Bulletin de l'Institut Pasteur, April 30th, 1916. [3] Bulletin médical, July 28th, 1916.

[4] Marcel Garnier: Les formes de l'ictère infectieux, Bull. de la Soc. Méd. des Hôpitaux de Paris, May 12th, 1916. L'ictère infectieux à recrudescence fébrile, Presse médicale, August 31st, 1916.

[5] M. Garnier: La transmission au cobaye de l'ictère infectieux primitif, Comptes Rendus de la Société de Biologie, Nov. 4th, 1916.

[6] M. Garnier et J. Reilly: L'élimination du spirochète par l'urine dans la spirochétose ictérigène chez l'homme, Presse médicale Oct. 3rd, 1918.

that there is a phase of the malady during which it is impossible to get ætiological proof by this means.

The virulence of the eliminated spirochæte varies according to the different stages of the illness. The forms appearing at the beginning seem to possess greater virulence than those met with during the static period. When the examination is positive it reveals them in the first days only in the state of isolated units, whilst later it shows them in clusters. Towards the end of the illness the spirochætes in the urine are deformed and distorted, their virulence is then diminished, and they produce in the guinea-pig a curable spirochætosis, as we have been able to prove in three cases, in particular with urine drawn off on the 34th day.

The virulence of the cerebro-spinal fluid has been shown by MM. S. Costa and J. Troisier,[7] who observed it in three cases at the beginning of the illness, at the same time as that of the blood. It seems to be the result of the initial septicæmia. In a fourth case the cerebro-spinal fluid was found to be virulent at the moment of a recrudescence of febrile symptoms; the virulence was diminished, the incubation period was long (18 days), and the animal recovered. It is very important to point out this fact, for it is known that the blood is never virulent at this period, and the virulence of the cerebro-spinal fluid seems to indicate that the recurrence of feverish symptoms is certainly due to a fresh multiplication of spirochætes.

2. *Direct Investigation of the Parasite in the Urine.*

For a long time the easiest method of diagnosing spirochætosis clinically has been the establishment of the presence of Inada's and Ido's parasite in the urine of icterus patients. It has, consequently, been recommended by various authors, Favre and Fiessinger,[8] Garnier and Reilly,[9] Pagniez, Cayrol, P. P. Lévy, and de Léobardy.[10] But the search is fruitful only if it is carried out at the favourable moment. It does not invest the diagnosis with any certainty except under the condition of not confusing *Spirochæta icterohæmorrhagiæ* with the other spirochætes which may eventually be met with in the urine. Together with Reilly we have therefore discussed the various conditions of elimination and the suitable technique in the article in the *Presse médicale* already quoted. According to our investigations, it is only towards the 12th day that we begin to find the parasite with some frequency; but it is especially from the 15th to the 23rd day—i.e., at the time of the recurrence of the feverish symptoms—that the search has most chance of success, and even then the examination is not invariably followed by positive results. The duration of the elimination period varies on the average from 5 to 10 days, though we have found it prolonged to 15, 18, and even 23 days; but elimination is not continuous during this period. On the other hand, the period may be abnormally shortened. In one case which came under our observation it lasted only 3 days, and in another only 1 day. If, therefore, the search for the parasite in the urine is to be used as a means of diagnosis it must be repeated daily during the favourable period until the presence of the spirochæte has been proved.

Elimination often ceases from the 20th or 22nd day of the illness, but it is not exceptional after the 30th day. In cases where the illness was of a sluggish type we have found it on the 32nd, 33rd, 34th, 40th, and 41st days. We have had two rare cases where the period may be verified as of much greater length, even up to the 100th day.

The appearance of the parasite in the urine varies according to the stage of elimination. At the beginning it is only very slightly waved and nearly straight; at the end degenerate forms with badly defined outlines are seen; finally, when elimination is prolonged one finds elements of a flexuous, more or less delicately waved form. Renaux and Wilmaers[11] have also met with such forms, but attribute them to change of technique.

The question of non-pathogenetic spirochætes has given rise to researches by MM. Netter and Salanier,[12] Noël Fiessinger,[13] Garnier and Reilly. They lead to a positive result only in cases of patients whose prepuce is long and overlapping, and whose glands and prepuce were not cleaned before the voiding of the urine.

The method employed is usually the examination of the deposit of centrifugalisation. If a centrifuge is not available the ligroin process may be employed, as recommended by Pagniez, Cayrol, P. P. Lévy, and de Léobardy. According to the same authors, if the examination cannot be made immediately on the emission of the urine, five parts of formalin must be added to every 100 parts of urine; the spirochæte may then be found even at the end of 22 days.

3. *Study of the Humoral Reactions.*

The development of *Spirochæta icterohæmorrhagiæ* in the organism causes the appearance in the serum of various substances, the establishment of which may be used in diagnosis.

A. *Immunisins.*—As the Japanese authors have noted, the search for immunising substances in the serum of patients is a means of diagnosing spirochætosis. However, in benignant types and illnesses assuming the type of catarrhal icterus immunisers may be wanting, or at any rate not be met with in the serum in sufficient quantity to protect the guinea-pig in ordinary doses. Thus, in a case which we observed in conjunction with M. Reilly,[14] the ætiological diagnosis was made certain by establishing the presence of spirochætes in the urine on three different occasions—the 15th, 17th, and 19th days—and the positive result of the inoculation of the urine into a guinea-pig, which succumbed to the usual lesions of icterohæmorrhagic icterus. The serum taken on the 29th day, injected in a 4 c.cm. dose, did not protect it from the inoculation of virus of passage.

B. *Sensitisers.*—The serum of patients affected with icterogenous spirochætosis contains a sensitiser relative to Sp.I. But the investigation of the deviation of the complement cannot be used for clinical diagnosis. Indeed, if the liver of a guinea-pig rich in spirochætes is used as antigen, the deviation of the complement is obtained with

[7] S. Costa et J. Troisier: Réactions méningées dans la spirochétose ictéro-hémorragique. Virulence du liquide céphalo-rachidien. Bull. Soc. Méd., Nov. 10th, 1916. La méningite dans la spirochétose ictéro-hémorragique. Presse médicale, April 2nd, 1917.

[8] Favre et N. Fiessinger: Des facilités du diagnostic de la spirochétose ictérique grâce à la méthode de Fontana-Tribondeau appliquée à l'examen des urines centrifugées. Bull. Soc. méd. Hôp., Dec. 8th, 1916.

[9] M. Garnier et J. Reilly: La recherche des spirochètes ictérigènes dans l'urine de l'homme et du cobaye. C. R. Soc. Biol., Jan. 6th, 1917.

[10] Pagniez, Cayrol, P. P. Lévy, et de Léobardy: Bull. Soc. Med. Hôp., Jan. 11th, 1918.

[11] Renaux et Wilmaers: Arch. médicales belges, 1917, Nos. 2 et 3. Renaux: Sur les modifications des affinités colorantes et de l'aspect morphologique de *Sp. icterohæmorrhagiæ* en culture. C. R. Soc. Biol., June 16th, 1917.

[12] Netter et Salanier: C.R. Soc. Biol., Jan. 12th, 1918.

[13] Noël Fiessinger: A propos des spirochètes du méat et de l'urine de l'homme normal. C. R. Soc. Biol., Jan. 12th, 1918.

[14] M. Garnier et J. Reilly: La recherche des substances immunisantes chez les convalescents de spirochétose icterigène. C. R. Soc. Biol., Jan. 20th, 1917.

serum from a spirochætic case as well as with serum from a syphilitic case (L. Martin and A. Pettit,[15] Garnier and Reilly[16]). In making use of antigen used regularly to establish Wassermann's reaction MM. Costa and Troisier,[17] Martin and Pettit have obtained the deviation of the complement with the serum of spirochætosis patients as well as with that of syphilis patients. However, speaking for ourselves in conjunction with Reilly, we have not had the same positive result when using a liver with hereditary syphilis as antigen.

C. *Agglutinins.*—The establishment of a specific agglutinin in the serum of patients infected with Sp.I. has been carried out by MM. Martin, Pettit, and Vaudremer,[18] who have applied this process to the diagnosis of spirochætosis. In order to get agglutination a culture of spirochætes must be used. In coöperation with Reilly[19] we tried spirochætes obtained by centrifugalising a urine quite exceptionally rich in parasites, but we did not obtain agglutination on mixing a drop of this microbe emulsion with a drop of serum from a patient attacked by a severe form of the disease on the 30th day of the same. On the other hand, the same spirochæte emulsion was beautifully agglutinised by the anti-spirochætic serum prepared by the Pasteur Institute in Paris.

By using a spirochæte culture MM. Martin and Pettit obtained agglutination in a dilution of 1/500 and often of 1/1000. The serum manifests its agglutinative power from the 10th day of the illness, sometimes even from the 6th day. The agglutinins continue to exist in the serum for a long time, and MM. Martin and Pettit have been able to verify them in one of their cases 22 months after the outbreak of the disease. Moreover, serum taken from a patient and preserved in vitro retains its agglutinative power for a very long time; MM. Martin and Pettit have proved it at the end of three months. Finally, neither normal human serum nor syphilitic serum ever contain agglutinins with respect to Sp.I. Consequently the diagnosis of spirochætosis by means of establishing agglutinins in the serum seems at present to be the best method of determining the origin of infectious icterus; it is, indeed, the most rapid and most easy to carry out, provided that a culture of spirochætes is at disposal. However, in a case recently reported[20] by Villaret, Bénard, and Dumont, no agglutinating power was shown by the serum, investigated by MM. Martin and Pettit at three stages of the disease and convalescence, although the urine contained a typical spirochæte making a guinea-pig icteric, and although the serum possessed immunising properties. I have just seen with Reilly a similar case. It must be admitted that in Sp.I., as in other infectious maladies, the agglutination test may occasionally fail.

CLINICAL FORMS OF ICTEROGENOUS SPIROCHÆTOSIS.

1. *Typical Form.*

Since hæmorrhages are exceptional in human beings ictero-hæmorrhagic spirochætosis is more exactly termed icterogenous spirochætosis, and its most typical form is *infectious icterus with febrile recrudescence*. This clinical type corresponds to the old *infectious icterus with relapses*, often described under the name of Mathieu's or Weil's disease.[21] French works have made us acquainted with its various modalities: the icterus may be more or less intense in different cases; the initial temperature is more or less high; the duration of the intercalary apyrexia varies from 3 to 14 days; the recurrence of the fever takes place from the 12th to the 23rd day of the illness. This recrudescent fever often follows a cycle; in that case it rises steadily to the maximum and then falls slowly to the normal; it affects the remittent type, and the differences between the daily maximum and minimum are always important. Sometimes it takes an irregular form, and the curve is uneven; sometimes, again, it takes a sluggish form, and the temperature oscillates about 38° for 8 or 10 days. After the second fall of temperature there are sometimes brief rises, outlining the second relapse. In all cases this renewed rise of temperature is not accompanied by a new attack of icterus. If the jaundice had begun to diminish during the apyrexia it continues to do so. Sometimes, however, an attack of bilious diarrhœa indicates that the liver has reacted on the fresh rise of temperature. Arterial tension is clearly diminished, as has been noted by Pagniez[22] as well as ourselves in coöperation with Reilly. The points which have attracted the particular attention of French authors are the meningeal reactions, azotemia and Ambard's constant, leucocytosis and the blood formula.

A. *Meningeal reactions.*—The meningeal reactions, which do not seem to have been pointed out by the Japanese authors, have been studied by MM. S. Costa and J. Troisier. These authors have found them in nine-tenths of the cases observed by them. The symptoms are those of acute meningitis. Lumbar puncture produces a clear fluid under increased pressure, usually yellow-tinted, at least when the icterus is very dark. This fluid contains an excess of albumin, as much as 0·60 to 0·70 on Sicard and Cantaloube's albuminimeter, a less than normal quantity of chlorides, glucose at a physiological rate or sometimes above it, urea in nearly always increased quantity. On centrifugalisation it forms a deposit of the common forms of polynuclears, mononuclears, and lymphocytes in equal proportions, the polynuclears being mainly of the forms in which meningeal symptoms predominate. According to our researches,[23] the meningeal reaction is clinically appreciable only in a quarter of the cases, but it is constant if measured by the results of lumbar puncture. On centrifugalisation the cerebro-spinal fluid gives a deposit which is made up of polynuclears on the 1st day of the icterus, and later, on the 3rd day, of mononuclears as well as of multinuclears; from the 6th to the 9th day reaction decreases and the multinuclears disappear, so that only mononuclears and lymphocytes are found. A similar reaction is found in the case of the dog, if a small quantity of biliary salts are introduced into the spinal cavity, as shown by experiments

[15] A. Pettit: C. R. Soc. Biol., Dec. 2nd, 1916, p. 1041.
[16] M. Garnier et J. Reilly: La spirochétose ictérigène, Paris médical, March 3rd, 1917, p. 180.
[17] G. Costa et J. Troisier; Sur la spirochétose ictérohémorragique, C. R. Soc. Biol., Dec. 2nd, 1916, p. 1040.
[18] L. Martin, A. Pettit, and A. Vaudremer: Sur les propriétés agglutinantes et immunisantes du sérum sanguin chez les sujets atteints de spirochétose ictérohémorragique, C. R. Soc. Biol., Dec. 22nd, 1917, p. 949. L. Martin et A. Pettit: Sérodiagnostic de la spirochétose ictérohémorragique, Bull. Soc. méd. Hôp., June 28th, 1918, p. 672.
[19] M. Garnier et J. Reilly: La spirochétose ictérigène, Paris médical, March 3rd, 1917, p. 180.
[20] Bull. Soc. méd. Hôp., Oct. 31st, 1919.
[21] M. Garnier et J. Reilly: L'ictère infectieux à spirochètes, Bull. Soc. méd. Hôp., Dec. 22nd, 1916. La spirochétose ictérigène, Paris Médical, March 3rd, 1917. J. Castaigne et N. Fiessinger: La spirochétose ictérigène, ses formes cliniques, son traitement, Journal des Praticiens, Oct. 13th and 20th, 1917.
[22] Pagniez, Cayrol, P. P. Lévy et de Léobardy: Etude clinique de 45 cas de spirochétose ictérigène, Bull. Soc. Méd., Nov. 30th, 1917, p. 1181.
[23] M. Garnier et J. Reilly: Les réactions méningées au cours de la spirochétose ictérigène, C. R. Soc. Biol., May 5th, 1917, p. 446.

made by M. Reilly and myself. Further, in our experience the meningeal reaction is connected with cholæmia and the passage of elements from the bile into the spinal cavity at the time when, at the beginning of the icterus, the pigment spreads into the whole organism. The virulence of the cerebro-spinal fluid is independent of the cytological formula, nor is it bound to the existence of meningeal symptoms; it is parallel to that of the blood, and a function of the initial septicæmia.

B. *Azotæmia and Ambard's constant.*—Authors who studied infectious icterus noted serious forms of azotæmia from the outbreak of the war onwards (Pr. Merklen). Lemierre showed that this azotæmia existed in the phase preceding icterus. In collaboration with M. Gerber[24] we found that azotæmia was met with in the different varieties of Sp.I. It is constant in severe forms, with oliguria and anuria, and reaches the very considerable figures of 6, 7, 8, and even 9·2 g. per 1000 in fatal cases. Recovery may take place after figures of 5·50 and 5·93 g. have been determined in the serum. The proportion of urea in the blood decreases only very slowly, and only returns to the normal at the end of about a fortnight. Sometimes the elimination of urea is disturbed during the whole course of the illness, and death is brought about slowly by the progress of the nephritis. In favourable cases retention of urea may sometimes be also proved at the commencement of the icterus; we have found figures of 1·11, 1·40, and 1·54.

At the beginning Ambard's constant attains a high figure; but it is well known that its determination is hardly of interest, except in cases of slight azotæmia, less than 1 gr. per litre. Now, although the proportion of urea does not generally rise again during the renewal of the fever the figure of the constant of urea secretion is always modified at this time. The rise is proportionately much less than at the beginning, but still very appreciable. Thus it reaches 0·130 or 0·160 in place of the normal 0·060.

C. *Hæmatology.*—The first examination of the blood was published by MM. Costa and Troisier.[25] Shortly afterwards E. Renaux[26] drew attention to the anæmia which appears even in patients who have not suffered from great hæmorrhages, to the slowness of the reparation of the blood, to the increase in globular resistance, and finally to the initial leucocytosis, together with the presence of neutrophil myelocytes. Later on Pierre Clément and Noël Fiessinger reported two fresh examinations. Together with Reilly we went into the question on a broader basis and reported the results of 60 examinations of the blood of 38 different patients.[27] We thus ascertained that in its medium and serious forms, and more rarely in its lighter forms, Sp.I. determines marked anæmia. Although it only manifests itself at convalescence this anæmia really appears early. It is in general less intense than would seem to be indicated by the colour of the patients, whose skin long retains the traces of biliary impregnation. Sanguineous reparation proceeds very slowly. When the myelocyte-producing activity of the bone marrow is exaggerated at the outset there is no blood-forming activity during the whole of the morbid development or even long afterwards. These data have been confirmed by anatomical examinations. This disturbance in the formation of blood seems certainly due to the parasite and its toxins, and not to cholæmia. Indeed, the experimental injection of biliary salts acts quite differently, and quickly produces the appearance of nucleated red blood corpuscles in the circulation.

At the time when icterus appears the number of leucocytes is increased, but this increase is slight and the number of leucocytes rarely exceeds 15,000. This leucocytosis declines during the apyrexia, and increases slightly with the recurrence of high temperature. This leucocytosis is multinuclear in character. The number of multinuclears rises to 84 or 86 per cent., declines in apyrexia, and increases again during the febrile period. In fatal cases this multinucleosis becomes so considerable as to reach 97 per cent. A similar condition is not found in icterus gravis without spirochætosis. In benignant forms multinucleosis does not occur.

Another characteristic of the leucocytic formula is the steadiness of the myeloid reaction. When it is feeble it hardly merits attention; indeed, we have been able to assure ourselves that it can be found in icterus due to obstruction caused by gall-stones or new growth. But it often reaches unusual proportions, particularly in cases where the icterus is intense. Not only do the neutrophil myelocytes pass into the circulation, where they are found in the proportion of 8 to 10 per 100 white globules, but other elements, such as Turck's cellules, may also invade the blood. This myeloid reaction may also be found in apyretic forms. Finally, eosinophilia is constant. In apyretic forms it appears early, and in febrile forms at the time of convalescence. It may persist for several months after the fall of temperature.

These modifications of the differential count must be compared with those observed in guinea-pigs by M. Bablet.[28] This author has reported a slight diminution in the number of red blood corpuscles, a constant leucocytosis varying between 7500 and 35,000, and, finally, a modification of the leucocytic formula characterised by the early appearance of abnormal elements, myelocytes, and by the rapid disappearance of mononuclears; among the leucocytes with polymorphic nucleus adult forms predominate at the beginning, younger forms at the end; according to Arneth's classification the leucocytic formula is regularly deviated to the left.

Coagulation disturbances have been studied by M. Pagniez,[29] who has observed a more or less marked delay of coagulation, with diminution or entire disappearance of the retractility of the coagulum. This disturbance of retractility is conditioned by a huge diminution in the number of the blood platelets. It appears before cholæmia and disappears when the icterus is still very marked; it is due to a selective action of the spirochæte and its products on the platelets.

Together with Reilly[30] we have ascertained that in febrile forms of Sp.I. the duration of coagulation is slightly lengthened, coagulation taking place with formation of a buffy coat capping the red clot. Even in fatal cases coagulation disturbances are

[24] M. Garnier et C. Gerber: Le fonctionnement des reins au cours de l'ictère infectieux primitif, C.R. Soc. Biol., Dec. 16th, 1916.
[25] S. Costa et J. Troisier: Un cas de spirochétose ictéro-hémorragique, Bull. Soc. méd. Hôp., Oct. 20th, 1916.
[26] E. Renaux: Note sur la spirochétose ictéro-hémorragique, C. R. Soc. Biol., Nov. 4th, 1916.
[27] M. Garnier et J. Reilly: Les réactions sanguines au cours de la spirochétose ictérigène, Arch. de Méd. expérimentale et d'Anatomie pathologique, December, 1917.
[28] Bablet: Les hématies au cours de la Sp. I. expérimentale chez le cobaye. La leucocytose au cours de la Sp. I. expérimentale chez le cobaye. C. R. Soc. Biol., March 9th and 23rd, 1918.
[29] Ph. Pagniez: Les troubles de la coagulation du sang dans la spirochétose ictérigène, C. R. Soc. Biol., Nov. 10th, 1917.
[30] M. Garnier et J. Reilly; Les réactions sanguines au cours de la S.I., 2me mémoire, Arch. de Méd. expérimentale et d'Anatomie pathologique, June, 1918.

always of slight intensity; moreover, the test of induced purpura is invariably negative, and the time of bleeding, as measured by Duke's method, is normal or even shortened.

Globular resistance to hypotonic saline solutions is increased in febrile forms, but this increase disappears before the end of the icterus, at the beginning of the recrudescence of fever, doubtlessly because the biliary salts disappear from the serum and the urine. In serious forms, in which the late anæmia syndrome appears at the period of definitive apyrexia, globular resistance continues to disappear. At the same time the globular resistance to saponin,[31] which was diminished at the beginning of the illness, becomes normal, as in hæmolytic icterus; nevertheless the study of the hæmolysis curve shows that it cannot be identified with that observed in hæmolytic icterus. At the time of recrudescence or immediately afterwards there is in reality an abrupt weakening of the globular resistance, bringing about rapid anæmia, then a kind of equilibrium is established between the diminished resistance of the globules and the hæmolysing agents. A phenomenon like this can only be explained by a modification of the chemical constitution of the globules, in particular a physico-chemical change in the globular colloids. Neither hæmolysin nor hæmolytic sensitisers ever appear in the serum. The anti-hæmolysing power increases at the beginning and disappears when the biliary salts cease to be found in the urine; it probably follows the variations in cholesterinæmia.

2. *Non-typical Forms.*

In a recent article[32] we have epitomised the opinions formed by us on non-typical forms of Sp.I. They may be grouped under three headings.

A. *Forms which are not typical in evolution.*—Sp.I. may take on the appearance of *icterus gravis*. Death is then usually caused by anuria accompanied by uræmic symptoms. Spirochætic icterus gravis never corresponds with Frerichs's acute yellow atrophy of the liver; that lesion never gives rise clinically to either azotæmia or multinuclear leucocytosis.

Sp.I. may assume the form of *catarrhal icterus*, several observations of which we have reported.[33] The illness then takes its course without fever and almost without any general phenomena. Within the range of one and the same epidemic centre one can see serious and light cases alternating. Finally, it may sometimes have a *lengthened* evolution;[34] we have reported two such cases in which the febrile attacks recurred for two and three months. In one of them the principal seat was the kidney (*renal form*), and each attack was accompanied by an increase of albumin in the urine. In the other the illness chiefly attacked the liver and the spleen (*hepato-splenic form*). Both these organs hypertrophied considerably; at the same time the complexion remained sub-icteric, so much so that the clinical aspect was that of Hanot's disease. MM. Sacquépée and Guy Laroche have also observed a case, in the course of the second month of which painful splenomegaly with cervical adenopathy was developed.[35]

B. *Non-typical forms due to some anomaly in the reaction of the organism.*—The chief symptom of the illness, icterus, may be wanting. This *anicteric form* presents several varieties. It may be pure—i.e., the illness may assume the usual clinical type of spirochætosis with febrile recrudescence without icterus making its appearance at any time. It may take a *myalgic* form, a beautiful case of which has been reported by MM. Bloch and Hébert.[36] In this case one of the main symptoms of the disease, icterus, did not appear at all, whilst myalgia, usually a secondary phenomenon, preponderated. General muscular hyperæsthesia, together with fever and general infectious symptoms gave the patient the appearance of suffering from meningitis, but careful analysis of the symptoms showed that there was neither Kernig's sign nor stiffness of the nape of the neck. Besides that, the cerebro-spinal fluid remained normal. Towards the 20th day there was a slight recurrence of fever. The patient recovered.

Finally, the non-typical form may be *meningitic in type*. MM. Costa and Troisier report two such cases.[37] The I.Sp. may assume a *meningitic form*. Icterus is then more or less marked according to the individual case; sometimes it is hardly noticeable, and it may even be entirely wanting. MM. Costa and Troisier have studied such cases. This association of icterus with the meningitic syndrome had already attracted the attention of observers, and MM. Guillain and Ch. Richet, jun.[38] had reported examples in 1910. They may be retrospectively connected with I.S.

Sometimes crises of violent pains complicate the clinical picture. MM. Sacquépée and Boidin report such a case.[39] In exceptional cases I.Sp. may first reveal itself by a mental syndrome, as in a case met with by M. Dujarric de la Rivière and another found by MM. Pierre-Kahn and Robert Debré.[40] The pulmonary form described by Sasportès in his thesis[41] is characterised by blood-stained expectoration and fugitive pulmonary symptoms at the outset of the illness. In the sputa M. Reilly and myself have been able to see spirochætes which we were not able to identify with exactitude and certainty, but the morphological aspect of which resembled Inada's parasite.

C. *Non-typical forms due to association of I.Sp. with some other illness.*—I.Sp. may be associated with a typhoid fever with Eberth's bacillus. Reilly and myself have reported such a case.[42] The disease developed with the appearance of a continuous fever with icterus; the spirochæte could be revealed by injecting urine into a guinea-pig which took the disease. Eberth's bacillus was isolated from the pus of a muscular abscess and purulent pleurisy, which supervened during convalescence; moreover, the patient's blood agglutinated Eberth's bacillus.

I.Sp. may appear in a patient previously attacked by biliary lithiasis, and a hepatic crisis may show itself during convalescence. M. Reilly and myself have observed a case of this kind. But as I.Sp. is a disease of the hepatic parenchyma and leaves the

[31] M. Garnier et J. Reilly: La résistance globulaire à la saponine au cours de la spirochétose ictérigène, C. R. Soc. Biol., March 31st, 1917.
[32] Marcel Garnier: Les formes atypiques de la Spirochétose ictérique, Journal médical français, April, 1919.
[33] M. Garnier et J. Reilly: Les formes légères de la S.I., Bull. Soc. méd. Hôp., Jan. 19th, 1919.
[34] M. Garnier et J. Reilly: Les formes prolongées de la Sp.I. (forme rénale et forme hépato-splénique), Bull. Soc. Méd., May 29th, 1917.
[35] Sacquépée et Guy Laroche: Sp.I. Réunion médicale de la 4me armée, Presse méd., April 16th, 1917, p. 226.
[36] Marcel Bloch et Pierre Hébert: Myalgies généralisées simulant une méningite aigüe, Spirochétose anictérique, Bull. Soc. méd. Hôp., Jan. 19th, 1917.
[37] S. Costa et J. Troisier: Nouvelles observations de Sp.I. à forme méningée pure, Bull. Soc. méd. Hôp., July 12th, 1918, p. 762.
[38] G. Guillain et Ch. Richet fils: Etude sur une maladie infectieuse caractérisée par de l'ictère et un syndrome méningé, Bull. Soc. méd. Hôp., Oct. 28th, 1910.
[39] Sacquépée et Boidin: Forme nerveuse de la Sp.I., Bull. Soc. méd. Hôp, May 9th, 1917.
[40] Pierre-Kahn et Robert Debré: Un cas de S.I. à forme mentale, Bull. Soc. méd. Hôp., Oct. 11th, 1918.
[41] Sasportès: Les formes fébriles de la S.I., Thèse, Paris, 1918.
[42] M. Garnier et J. Reilly: Sp.I. et fièvre typhoïde associées, Bull. Soc. méd. Hôp., April 20th, 1917.

biliary tracts intact, whilst lithiasis is a disease of the biliary tracts which does not affect the hepatic parenchyma, it is plain that the two diseases do not affect each other very much. Finally, I.Sp. may be associated with acute leukæmia, as in the case described by MM. Sicard, H. Roger, and L. Kindberg,[43] although it cannot be said whether the I.Sp. marks a secondary infection or whether it in itself determines the leukæmic syndrome.

3. *Complications.*

Various complications have been noted with I.Sp.

Aortic weakness.—At the beginning of the convalescence of one of our patients M. Reilly and I noted the appearance of a diastolic murmur at the base in the midst of the clinical syndrome, revealing an acute aortic attack—retro-sternal discomfort, pain on passing the alimentary bolus into the œsophagus, vomiting. These phenomena disappeared rapidly, but the murmur due to aortic weakness persisted and the pulse became uneven. The icterus spirochæte is therefore able to produce lesions of the aorta exactly like the syphilis treponema, with which it has analogies.

Acute cardiac dilatation.—MM. S. Costa and J. Troisier[44] have noted in four of their patients a syndrome of acute cardiac dilatation characterised by the increase in the area of præcordial dullness, the muffling of the first bruit, sometimes a regular galloping sound, probably connected with dilatation of the left ventricle, a marked weakness of arterial tension. This cardiac dilatation syndrome coincided with azotemia. It disappeared progressively after about ten days.

Parotitis.—Long ago parotitis was noted amongst the complications of icterus gravis. It is sometimes found in severe cases of spirochætosis; it may give place to a periparotitic phlegmon, a case of which we have reported.

Secondary infection of the biliary tracts.—In autopsy of severe forms of I.Sp. an infection of the biliary tracts may be observed, cholecystic in nature with streptococci in one case, in the others with hypertrophy of the hilar ganglions.[45] This infection is not accompanied by any clinical symptoms.

PATHOLOGICAL ANATOMY.

The pathological anatomy of I.Sp. has been the subject of several publications by MM. Martin and Pettit, Garnier and Reilly. The former have had regard chiefly to the hæmolymphatic agents, the latter to the liver and the kidneys. In I.Sp. in the guinea-pig MM. Martin and Pettit[46] have noted hæmatophagous phenomena at the surface of the lymphatic ganglions, and these have been found, though to a less extent, in several other organs, notably the spleen and liver.

M. Reilly and myself[47] have studied the state of the hæmolymphatic organs during I.Sp. in human beings. At the beginning of the affection the bone marrow is reddish in colour. When viewed under the microscope, proliferation is manifest in the elements of the white series, almost entirely in the myelocytes. By means of appropriate methods the presence of typical spirochætes can be demonstrated. If death supervenes after a long period the bone marrow is uniformly grey. The microscope reveals considerable macrophage activity, together with the presence of large masses of pigmentary grains inside the cells. This hæmatophagous activity, which explains the presence of anæmia, is accompanied by a marked deviation of the medullary function, the hæmatopoietic character of the marrow as largely diminished, whilst its myelocyte activity is considerable. The spleen is usually normal in weight. If death supervenes at the beginning of the illness, it presents macrophage excitation of the cells of the reticulum, contrasting with the integrity of the follicles. In cases where death is tardy, one notices an appearance of hypertrophic sclerosis of the pulp-augmentation of the cells with clear nucleus and thickened reticulum.

In human beings the lymphatic ganglions may exceptionally present the lesions described by MM. Martin and Pettit as occurring in the guinea-pig. In a case which we have observed the ganglions presented follicular hyperplasia with multiplication of the large mononuclears without macrophages. In some cases hypertrophy of the ganglions of the hilum of the liver may be noted, with necrosis of part of the medullary zone. This hilar adenopathy seems to us to stand in connexion with a secondary infection of the biliary ducts; indeed, in one case we were able to find on the sections bacilli with the morphological appearance of Hallé's *Bacillus funduliformis*. As regards the liver, MM. Martin and Pettit[48] have laid stress on the polymorphous nature of the lesions in connexion with the two cases observed by them, and also on the existence of a certain amount of karyokinesis and the intensity of the hæmatophagic reaction. Reilly and myself[49] have been in a position to study the livers of 23 patients who have died of Sp.I. and have reported the results of our examinations. The organ is regularly increased in size, and its weight varies from 1650 to 2350 g. The biliary tracts are always free; a catheter is easily introduced; the gall-bladder sometimes contains brown or greenish-brown bile; in other cases it is limp and flattened, and only contains a little thick mucus, generally coloured. From the point of view of microscopical examination it is necessary to distinguish cases when death occurred before the 15th day from those in which it occurred later. To begin with, the lesions are variable, but they may be nevertheless reduced to three types. The first is characterised by nearly complete integrity of the parenchyma and cellular hyperplasia. The second is determined by the disappearance of the columnar arrangement of the liver structure and extensive cellular degeneration. The third contains intermediary states between the two preceding types. The hyperplastic reaction seems to be the fundamental modification of the parenchyma of the liver; when it exists at all the cellular degeneration has no specific character. Still, it is well to note that fatty degeneration is always moderate, thus distinguishing spirochætosis liver from Frerich's acute yellow atrophy. In portions removed immediately after death we have been able to study the delicate lesions of the proto-

[43] J. A. Sicard, H. Roger, et L. Kindberg: Leucémie aigüe avec spirochétose urinaire et viscérale. Séro-diagnostic ictéro-hémorragique positif de Martin et Pettit. Bull. Soc. méd. Hôp., Oct. 11th, 1918.

[44] S. Costa et J. Troisier: De la dilatation cardiaque aigüe dans la Sp.I., Bull. Soc. méd. Hôp., May 4th, 1917.

[45] M. Garnier et J. Reilly: L'infection secondaire des voies biliaires dans la Sp.I., Bull. Soc. Méd., March 1st, 1918.

[46] L. Martin et A. Pettit: Réaction hématophagique dans les ganglions lymphatiques du cobaye au cours de la I.Sp., C. R. Soc. de Biol., Nov. 4th, 1916.

[47] M. Garnier et J. Reilly: Les organes hémolymphatiques au cours de la Sp.I. (moelle osseuse, rate, ganglions lymphatiques), Archives de Médecine expérimentale et d'Anatomie pathologique, Sept., 1918, p. 155.

[48] L. Martin et A. Pettit: Apropos des lésions histologiques qui surviennent chez l'homme au cours de la Sp.I., C.R. Soc. de Biol., June 30th, 1917.

[49] M. Garnier et J. Reilly: Etude anatomique du foie dans la S.I. chez l'homme, Arch. de Médecine expérimentale et d'Anatomie pathologique, March, 1919.

plasm and to recognise the changes in the chondroma, which may be referred to two types—viz., homogenisation and cytolysis. Homogenisation is the first in time; it is found sometimes in livers which have undergone only very slight change and have been invaded by hypertrophied cells. Whatever the form and intensity of the lesions, they are always diffuse, reach all regions of the lobule, and show no tendency to gather into centres. From this point of view the pathological changes brought about by Sp.I. are completely different from those caused by infectious illnesses accompanied or not accompanied by icterus.

In the case of patients who died after the 15th day, we note the integrity of the lobule, the structure of which is preserved, hyperplasia of a large number of cells and degeneration of some of them, biliary stagnation and an accumulation of pigmentary grains in the lobule. The stagnation is noticeable from the 20th day onwards and continues to the end of the illness; it is accompanied by a dilatation of the intercellular biliary canaliculi, which is often enormous. Consequently the preparations are like those obtained in cases of icterus following on biliary obstruction.

MM. Martin and Pettit have also pointed out lesions of the kidney, hæmorrhages within and between the Fallopian tubes, the presence of hyaline and granular casts, groups of multinuclear leucocytes, and finally the beginning of interstitial sclerosis. M. Reilly and I have noted the localisation of the lesions in the twisted tubes, whilst the glomerules remain untouched. The spirochætes are invariably eliminated by the twisted tubes; at first they gather round the tubes, and at a second stage pass through the wall of the cell and enter into the bore of the canal.[50]

PATHOLOGICAL PHYSIOLOGY.

The evolution of the Sp.I. is very curious and is determined by the action of the biliary salts on the parasite. In coöperation with Reilly we have, indeed, shown that the bile, and in particular the biliary salts, suppress the virulence of the icterohæmorrhagic spirochæte.[51] Since then we have recognised that solutions of biliary salts bring about the lysis of the icterogenic spirochæte by acting on this parasite, as they do on the pneumococcus. Consequently, it is easy to understand the progress of the illness. As soon as the icterus appears the kidney shuts down and the elements of the bile accumulate in the organism. At this point the blood decreases in virulence and the temperature declines progressively. It remains normal as long as the excretion of biliary salts persists, an expression of cholalæmia. But the biliary salts soon disappear from the urine, Hay's reaction becoming negative, whilst the excretion of pigment continues. Then the temperature rises again, and the new febrile attack marks the effort of the organism to react and realise the conditions requisite for producing immunity.[52] The duration of the intervening feverless period is determined by that of the cholalæmia. The intensity of the recrudescent fever depends upon the virulence of the germ, and at the same time upon the ease with which the system produces biliary salts. The reason for the recrudescence being sometimes only outlined is that the biliary salts still persist in the urine, and that for several days two phenomena overlap, a slight rise in temperature and cholaluria.

In I.Sp. icterus is by no means due to the intestine. Macroscopic and microscopic examinations show that there is no obstacle to the circulation of the bile, which can flow freely into the intestine, and moreover the matter is often coloured. Nor does the almost complete integrity of the liver in certain fatal cases of spirochætosis allow us to think that the icterus is due to a slighter communication between the biliary duct and the blood capillary, which would presuppose the destruction, or at least a profound affection, of the hepatic cells. The icterus therefore cannot be explained by a biliary retention connected with notable lesions of the hepatic cells, as MM. Brulé and Moreau have attempted to do.[53] It must be admitted that at the origin of the process there is some disturbance in the cells the nature of which escapes us, but which consists in a deviation of the biliary secretion which is diverted into the canaliculus instead of following its usual path and reaching the blood capillaries.

This deviation of the cellular secretion is not the only disturbance at the beginning of icterus. It is accompanied by irritation of the functions of the liver, which is proved by the hyperplasia of the hepatic cells and betrays itself not only by excess of bile, but also by excess of nitrogenous matter in the blood and urine. The frequent integrity of the liver, which would be otherwise so surprising in a disease in which hepatic disturbance is so marked, may now be understood. The absence of virulence in the tissues as found on autopsy, and the difficulty often found in identifying the microbe under the microscope may also be understood. Death mostly supervenes from renal lesions, when the icterus is intense; all the tissues are impregnated with bile. But when death occurs in the septic period, when the icterus has not completely developed, the tissues are virulent after death and the parasite can easily be found.

It is not, however, the fact that the cells cannot degenerate. Autopsies prove it, whilst from the clinical point of view signs of hepatic failure may appear. Thus MM. Clément and Fiessinger have been able to prove hepatic failure in two cases[54] by investigating the glycuronic acid in the urine. In spite of the administration of camphor the reaction was negative until convalescence.

ÆTIOLOGY.

1. *The Parasite.*

Several Frenchmen have published their studies of the parasite of I.Sp. By means of Laveran's panchromatic stain, or Burri's Indian ink method, M. Legroux[55] has demonstrated that *Spirochæta icterohæmorrhagiæ* is not a filament with two or three undulations, but a spiral filament with numerous spiral turns. By using Löffler's and Van Ermengen's methods of staining the flagella, MM. L. Martin, A. Pettit, and A. Vaudremer[56] have established the fact that the two extremities of the parasite are

[50] M. Garnier et J. Reilly: Etude anatomique des reins dans la spirochétose ictérique chez l'homme, Arch. de Méd. exp. et d'Anat. path., August, 1919.

[51] M. Garnier et J. Reilly: Action de la bile sur la virulence de Sp.I., C. R. Soc. Biol., Jan. 6th, 1917.

[52] M. Garnier et J. Reilly: Influence de la cholalémie sur l'évolution de S.I. chez l'homme, Bull. Soc. méd. Hôp., Nov. 23rd, 1917.

[53] Brulé et Moreau: Sur la cause de la rétention biliaire dans la Sp.I., C.R. Soc. Biol., May 19th, 1917.

[54] Pierre Clément et Noël Fiessinger: Deux cas de spirochétose ictérique avec réproduction expérimentale; spirochéturie et insuffisance hépatique glycuronurique, Bull. Soc. méd. Hôp., Dec. 8th, 1916.

[55] R. Legroux: Recherche de Spirochæta hæmorrhagica, C. R. Soc. de Biol., Nov. 18th, 1916.

[56] L. Martin, A. Pettit, et A. Vaudremer: Coloration du spirochète de l'ictère hémorragique par les méthodes de Löffler et de Van Ermengen, Présence de cils, C. R. Soc. de Biol., Dec. 20th, 1916.

provided with cilia. One of them forms a loop and attains a length nearly equal to half the body of the spirochæte, while the other is shorter and seems more rigid. The Japanese writers indicate a loop at the ends of the spirochæte, though their description did not allow of understanding its origin; but these loops are easily explained when the existence of the cilia is known. They are due to the displacement of the latter.

As to the colouration of the parasite, it is well known that it is easily impregnated by simple nitrate of silver, but that procedure with silver nitrate and pyridin fails. According to Hollande,[57] this failure in impregnation is caused by the body of the parasite being surrounded by a lipoid which resists reduction by nitrate of silver. If the thin layers of colour are first treated with grease solvents, such as ether, chloroform, or xylol, colouration with nitrate of silver and pyridin is successful. In reality, as Hollande himself saw,[58] the lipoids which prevent the impregnation of the spirochæte in the layers do not really belong to the spirochætes themselves, but come from the cellular elements in which they are enclosed. Nevertheless, if either icterus spirochætes taken from cultures, or syphilis treponemas or *S. dentium*, is mixed with fresh liver pulp from a guinea-pig, it is found that *S. ictero-hæmorrhagiæ* alone is not impregnated by pyrodinic nitrate of silver after fixation in alcohol by itself, and is only impregnated after being passed through alcohol ether. We have there a differential characteristic which may perhaps be used in the diagnosis of these various parasites.

Further, Manouélian[59] has modified the procedure which he and Levaditi had recommended in 1906 in such a way as to allow of a rapid impregnation of the spirochætes.

Cultures of icterus spirochætes have been obtained by MM. L. Martin, A. Pettitt, and A. Vaudremer[60] by making use of a mixture of rabbit or ox serum with physiological saline of a strength of 8·5 per 1000 or Locke's liquid. The best medium for culture is that made up of one part of rabbit serum to six parts of physiological saline at 8·5 per 1000. At first they thought 23° to be the most favourable temperature, but according to their last researches they gave 29° to 30°. Subcultures are easily made and the virulence is prolonged, though it diminishes slowly and progressively.

2. *The Part Played by the Rat as Virus Reservoir.*

Taking the investigations of the Japanese writers as their starting-point, MM. Martin and Pettit[61] have shown that the Norwegian rat, so common in the army zone, might be a reservoir of virus. Out of five rats caught in a part of the French front from which we had a patient with I.Sp. one had spirochætes in its tissues, as was proved by inoculation into a guinea-pig, which succumbed with characteristic symptoms. Shortly afterwards MM. J. Courmont and Paul Durand[62] sought for the icterus spirochæte in 50 sewer rats caught in various parts of Lyons. Inoculation into guinea-pigs proved its presence in four cases. Later on MM. Martin and Pettit[63] found icterus spirochætes in rats caught in Lorient and Rennes. They did not find any in the course of a first series of investigations carried on in April on rats from Marseilles, and similarly MM. Nicolle and Blanc[64] did not find a single one in Tunis during February and March. But fresh investigations in the autumn demonstrated to MM. Nicolle and Lebailly[65] the presence of the virus in 28 per cent. of the rats in the slaughter-houses of the town, though in accordance with the spring investigations they were not found in street rats. It is noteworthy that not a single case of I.Sp. had been reported from Tunis. MM. Nicolle and Lebailly[66] prosecuted their researches into the disease produced experimentally in the guinea-pig by rat virus and have defined its characteristics. This illness can be cured and is characterised solely by fever without icterus; the animal is then immune.

Finally, MM. Nicolle and Lebailly[67] showed that I.Sp. inoculated into rats or mice may persist for a long time in the bodies of these animals. The period of latent conservation may be 69 days in *Mus decumanus*, 102 days in *Mus alexandrinus*, and at least 100 days in the grey mouse. Inoculation of mice therefore provides a convenient method for transporting the virus of infectious icterus to a distance and for preserving it at little expense.

In the town of Algiers L'Héritier[68] found rather different results from those obtained in Tunis. The proportion of animals infected with parasites is only 6 per cent. at most; there are more in winter than in summer, and the harbour rats are less frequently affected than town rats.

As Migayama has already shown, rat virus and human virus are very much alike, and serum prepared from rat virus by Ch. Nicolle in Tunis makes the guinea-pig impervious to human virus (Martin and Pettit). But the virulence of spirochætes isolated from the rat decreases in the course of transmission (A. L'Héritier), and the injection of rat virus into the guinea-pig does not invariably bring about spirochætosis (Martin and Pettit).

3. *Susceptible Animals.*

MM. J. Courmont and P. Durand[69] have shown that the young dog is susceptible; it certainly contracts typical and fatal I.Sp. after subcutaneous or intraperitoneal inoculation, or after ingestion of infectious matter. In three cases MM. S. Costa and J. Troisier[70] have transmitted jaundice to rabbits by inoculating blood from spirochætosis patients. Only one of these animals died, on the 11th day; 22 c.cm. of blood had been injected into the left thigh. Various other writers have obtained confirmatory results (Ulenluth and Fromme, A. Monti).

4. *Paths Taken by the Virus in Penetration.*

MM. J. Courmont and P. Durand[71] have examined whether I.Sp. passes through the skin, and have found that it invariably (7 times out of 7) passes through the shaved skin, and nearly always (5 times out of 6) through the depilated skin, but only 3 times out of 6 through the entirely untouched skin.

5. *Epidemiology.*

I.Sp. is more common in summer. We have ascertained this in the military service which we have been carrying on for three consecutive years, 1916 to 1918, during which we received all the icterus cases from one of the largest armies on the French front. In Sapportès's thesis we have reproduced a graph showing the number of cases in each month of 1916 and 1917. They are most numerous in summer, from June to October, whilst they are scarce from December to March. Men who had studied infectious icterus had already informed us of the greater frequency of the disease in summer.

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[57] Hollande: Au sujet d'une réaction microchimique du spirocheta ictéro-hémorragiæ, C. R. Soc. de Biol., June 2nd, 1917.

[58] Hollande: Action de lipoïdes sur l'impregnation pyridoargentique du Sp.I., C. R. Soc. de Biol., July 28th, 1917.

[59] Monouélian: Technique rapide pour l'impregnation des organismes spiralés dans les coupes, C. R. Soc. Biol., July 20th, 1918.

[60] L. Martin, A. Pettit, et A. Vaudremer: Culture du Sp.I., C. R. Soc. Biol., Feb. 17th, 1917.

[61] L. Martin et A. Pettit: Présence de Sp.I. chez le surmulot de la zone des armées, C.R. Soc. Biol., Jan. 6th, 1917.

[62] J. Courmont et P. Durand: Le rat d'égout "réservoir de virus" pour la Sp.I., Bull. Soc. méd. Hôp., Jan. 26th, 1917.

[63] L. Martin et A. Pettit: Présence de Sp.I. chez le surmulot de l'intérieur, C.R. Soc. de Biol., Jan. 16th, 1917.

[64] Nicolle et G. Blanc: Première enquête sur l'existence chez le rat de Tunis des spirochètes pathogènes pour la cobaye, C.R. Soc. Biol., May 5th, 1917.

[65] Ch. Nicolle et Ch. Lebailly: Existence du spirochète de l'ictère infectieux chez les rats des abattoirs de Tunis, C.R. Soc. Biol., April 13th, 1918.

[66] Ch. Nicolle et Ch. Lebailly: Etude du virus ictérigène naturel durrat, ibid., April 13th, 1918.

[67] Ch. Nicolle et Ch. Lebailly: Conservation latente du spirochète de l'ictère infectieux chez les rats et souris inoculés expérimentalement, ibid., May 11th, 1918; Nouveaux faits concernant l'étude du spirochète de l'ictère infectieux.; Un procédé de longue conservation du virus dans les laboratoires: l'inoculation à la souris, C.R. Soc. Biol., Dec. 7th, 1918.

[68] Bull. Soc. Path. exot., 1918, p. 357.

[69] J. Courmont et P. Durand: Le S.I. chez le chien, C. R. Soc. Biol., March 17th, 1917.

[70] S. Costa and J. Troisier: Mort du lapin et survie du cobaye dans le S.I. expérimentale, C. R. Soc. Biol., Jan. 6th, 1917.

[71] J. Courmont et P. Durand: Pénétration transcutanée du spirochète de l'ictère hémorragique, C. R. Soc. Biol., March 17th, 1917.

THE LANCET.

LONDON: SATURDAY, DECEMBER 20, 1919.

An Experiment in Racial Pathology: Christmas in Vienna.

THE letter of Professor K. F. WENCKEBACH, which we print on p. 1167, gives no information which cannot be obtained from other contemporary sources, but it comes with the special appeal of a distinguished medical man, an "international" of pre-war times, to his colleagues in this country. Long time director of the Pathological Institute at the University of Groningen, WENCKEBACH is an old friend of many leaders of the English-speaking medical profession, and during his recent flying visit to London and Oxford he found the warm reception which he was entitled to expect, and yet did not dare to count upon. He has been the intermediary of a message to the medical fraternity in Vienna which may serve to hearten them in circumstances of unprecedented difficulty. What the difficulties are in detail there is no need to recapitulate here. The most recent account is given in a letter, dated Dec. 6th, from a special correspondent of the *Manchester Guardian* which appeared in the issue of Dec. 12th. "The whole life of Vienna is haunted by this lack of fuel"; the children "are suffering from the lack of all necessities of health"; linen is so scarce that in the operating room of a baby clinic "every patient ..... has to be laid on the same sheet": these horrors are becoming commonplace to those who know the facts. But they are only the prodrome of the convulsion which is to come when the mid-European winter sets in, unless some radical change occurs.

"We cannot wait" is the note of WENCKEBACH'S letter and of a recent leading article in the *Neue Freie Presse*, headed "Untenable Conditions," and written with a frank and caustic humour. After alluding to the men of science who went to the uttermost parts of the earth to study the solar eclipse and to verify the attempt of Professor EINSTEIN to upset the Newtonian laws of motion and all that has been builded upon them, the writer points out that the explorer need go no farther than Vienna to investigate the destructive effects of a debased currency and of the action and reaction upon each other of such a currency and of a strange financial policy. In the process men who have spent their whole lives in honourable labour for small reward are slowly being crushed to atoms in the economic mill. An Austrian republic without sufficient corn-lands, with scanty coal-mines, with no access to the sea, and strictly limited transport facilities is proceeding to doom, rendered inevitable by economic laws which an EINSTEIN could scarcely deflect. To us who are students of morbid processes on an organic and personal scale, there is something of deep but terrible interest in this spectacle of the inevitable working out of an experiment in racial pathology. Obviously nothing but the removal of the cause is going to cure the ill or prevent its further development, and the removal of the death-sentence rests with our rulers.

But there is one ray of comfort meanwhile. Although it does not lie in us to cure the malady, some symptomatic treatment is possible and may help to tide over an emergency. The delegates of the Lister Institute are studying on the spot the best way of avoiding scurvy and are popularising the results obtained. A report from Vienna has reached the Friends' War Victims and Emergency Committee, stating that a consignment, including amongst other things 304 cases of medicines and dressings, 8917 cases of foodstuffs, including milk, and 120 bales of linen and blankets, has been safely received, and is being distributed under the supervision of Professor TANDLER, Under Secretary of State to the Ministry of Health. Professor WENCKEBACH assures us that any supplies sent to him at the First Medical Clinic in Vienna will be used to good purpose; they may afford to some, possibly to more than a few, just the modicum which will keep nutrition going until the crisis is over. And whatever the material result may be, it is quite certain that such gifts will produce a harvest of goodwill which cannot be a matter of indifference to a profession which has in the past owed much to Vienna beyond pleasant and hospitable relations.

The Story of Wound Shock.

A REPRINT[1] of the reports of the Special Investigation Committee of the Medical Research Committee on Surgical Shock has recently appeared in book form, and serves to direct attention to a subject of far-reaching importance. The initiated may begin by regretting the omission of a memorandum issued in February, 1917, by the Shock Committee, for it was this brief document which introduced new and hopeful ideas to many workers in France at a time when the problems of shock seemed almost overwhelming. The thoughtful clinician in the front line thenceforth had the stimulus of working hand-in-hand with the keen investigator at home, and as time went on the relations between the two arms of this service became more intimate. The results of laboratory research were communicated forthwith to the surgeons in the clearing stations, and in exchange clinical observations, results of pathological inquiries, and notes of therapeutic measures undertaken were forwarded for criticism and advice. There is instruction to be drawn from the sequence of events in the years 1916–18.

[1] Special Report Series, No. 25, pp. 285, H.M. Stationery Office.

In the summer of 1916 intravenous infusion with normal saline was employed on a large scale with discouraging results, although at one clearing station treatment in a special ward by warmth, quiet, and fluids was successful in apparently hopeless cases. In the early spring of 1917 one of the surgeons from a clearing station was given opportunities for making blood pressure observations in the trenches, which established the predominating effect of cold in the production of shock in wounded men. The use of gum saline was suggested by Professor W. M. BAYLISS in 1916, and gradually became general. In the summer of 1917 Professor W. B. CANNON took part at Bethune in a system whereby both clinical and laboratory observations were made on a certain number of serious cases from the time of the receipt of the wound, during the journey down the trenches, and in the ambulance to the clearing station, where observation was continued through the operation and until the commencement of convalescence. Wound shock, as it was now called, was thus classified into primary and secondary. In the few primary cases the blood pressure was found to be lowered immediately after receipt of a wound, and profound constitutional disturbance was already present. In the greater number, even with such injury as gunshot amputation or penetrating abdominal wound, no untoward symptoms arose, nor did the blood pressure drop until such factors as cold, hæmorrhage, and toxæmia, bacterial or otherwise, were brought into play. The conception of secondary wound shock now became clear and definite, and accordingly a vigorous campaign was started against shock. In every regimental aid-post arrangements were made for the réchauffement of patients, who thus arrived at the station fit for operation. The resuscitation ward became an established institution, with a sufficient number of beds ever ready for wound shock cases. Medical officer, sister, and orderlies formed a team to heat up and infuse with blood or gum saline all patients requiring it. Enthusiasm being aroused, gum infusion in the actual line was practised, and men were thus kept alive to reach the clearing station. Reduced alkalinity of the blood was at first thought to be one of the causal factors in shock, but later it became clear that the acidosis was a result and not a cause of the lowered blood pressure. Experimentally it was shown that on raising the blood pressure by infusing gum solution the normal alkalinity of the blood returned. From the sum-total of experimental and laboratory work four facts ultimately emerged as characteristic of wound shock, namely: (1) Increased capillary permeability; (2) reduced blood volume; (3) arterial hypotension; (4) consequent intracellular anoxæmia, leading to cerebral changes and finally death.

This being but a summary of a long series of reports of surpassing interest, what is the application of all this research work and war experience to everyday civilian practice? Wound shock occurs daily in accidents in street and factory; surgical shock is not yet banished from our operating theatres. In the first place, those who are responsible for the teaching and supervision of first-aid should impress on all concerned the importance of the preventive treatment of shock. The value of efficient splinting, early arrest of hæmorrhage, and prevention of chill cannot be over-estimated. Stretchers should be abundantly provided with blankets and hot bottles, and motor ambulances heated electrically or otherwise. In the casualty departments of hospitals means should be at hand for warming up the patient while waiting to be examined or treated. In the operating theatre a few electric lamps under the table are easily controlled and are safer than hot bottles. In the private nursing home a suitable oil lamp placed under the table will vastly affect the condition of the patient at the end of operation. Sisters and nurses everywhere should be made fully alive to the effect of cold in the production of shock. The operator has his special contribution to make in the form of speed, gentleness, and attention to hæmostasis. If shock develops, fluids are given by mouth or rectum, or, in urgent cases, by a vein, gum saline being of more lasting effect than normal salt solution. Blood transfusion has its place in civilian surgical practice, and the apparatus, together with a suitable donor, should be available at every large hospital. Applied in this way one of the greatest surgical lessons of the war will not have been learned in vain.

The Draft Regulations for 1920.

THE National Insurance Benefit Draft Regulations for 1920 were the subject of a conference convened in London last week by the British Federation of Medical and Allied Societies, which met at the Steinway Hall on Friday, Dec. 12th, under the chairmanship of Sir MALCOLM MORRIS. A report of the conference will be found in another column, but we may repeat here the words of the first resolution, which, if it can be acted upon with the full support of the medical profession and the ancillary bodies thereto, and if it can obtain sympathetic appreciation among prominent members of the public, should have valuable effect. The resolution runs as follows:—

"That in the opinion of this Conference of medical and allied organisations the Draft Regulations for 1920 proposed to be made by the Minister of Health with respect to the administration of the National Health Insurance Medical Benefit are not adapted to secure the most efficient service from the medical profession nor adequate results to the community."

The medical feeling, thus illustrated, conflicts with statements in the press that the medical profession is really satisfied with the regulations; while Dr. ADDISON'S assurance in the House of Commons, that at a meeting of Panel Representatives only three dissentients were found out of 147 Representatives, must be understood exactly, if it is not to be misunderstood. Those who expressed a general approval

of the new regulations cannot be regarded as having no criticism to pass upon them. On the contrary, apart from those members of the medical profession who actively object to the panel system, there are many—very many—who find the new regulations faulty, and it was due to this feeling that the conference was convened by the Federation.

The conference kept admirably to the tone set by the chairman's brief introductory remarks, in that small details were not discussed, bickerings were avoided where principles were not concerned, and a real wish was shown by all the speakers to ensure that the medical profession would act in unison with the authorities to secure for the public the best form of service. This note was struck when both Dr. E. H. M. STANCOMB, the proposer, and Dr. GORDON DILL, the seconder of the essential motion, asked that medical men should have a freer hand than was provided through the regulations as regards the actual methods by which panel patients receive treatment. Dr. A. LATHAM'S remark that the regulations could have been as well drawn up in 1913 as in 1919 was a severe criticism which appeared to meet with common agreement in the room, although this was tantamount to saying that all the vast advances which have been gained for medicine during the war are left out of account by the Ministry of Health, which takes no larger view of the medical wants of the community to-day than could have been taken had no such advances been made. As there is reason to suppose that, when the Prime Minister has been made aware of the outcome of the conference, he will receive a deputation, we trust that this point will be taken. Sir BERTRAND DAWSON, who is chairman of the Medical Consultative Council of the Ministry of Health, but who attended the conference, of course, as a private individual, assured the audience that the Minister was anxious to meet the medical profession and to work in harmony with it, and added that his Council were making an official inquiry into the best type of medical service, a report of which would soon be issued. Both Sir BERTRAND DAWSON and Colonel F. E. FREMANTLE, the Coalition candidate for Mid-Hertfordshire, agreed that a full-time medical service was not required, but that a fuller use should be made of the vast and varying medical talent already at the disposal of the country in public, private, and mixed capacities. This, throughout, has been the attitude which we have attempted to maintain in these columns.

The British Federation of Medical and Allied Societies have done thoroughly good work by convening the conference, for the resolutions passed after well-argued and reasonable speeches show what is the general feeling of the medical profession, and of the bodies allied. By the invitation of Sir WATSON CHEYNE, representatives of the Federation have met the Committee of Medical Members of Parliament on the matters at issue.

Annotations.

"Ne quid nimis."

THE BELGIAN DOCTORS' AND PHARMACISTS' RELIEF FUND.

THE last meeting of the constituents of the Belgian Doctors' and Pharmacists' Relief Fund took place on Monday afternoon last, when Dr. Pechère, the President of the Committee which, sitting in Brussels, took charge of the distribution of all moneys, delivered a message of thanks to the subscribers. An account of the meeting, which was held by the permission of the Royal Society of Medicine in the house of the Society, is given elsewhere (see p. 1159), and Dr. Pechère's address will be read, we know, with real emotion. Speaking slowly but clearly, his narrative gained in effect by its studied moderation. He stated the simple facts as he had seen them, or had learned them from incontrovertible evidence, and as he spoke a picture emerged of courage in misery, of tenacity in terrorism, which will not be forgotten by his audience. Those who subscribed to the Fund will have satisfaction in knowing how many they succoured, and what hope their practical sympathy kindled in despairing breasts. And those who managed the Fund may congratulate themselves upon the results of their work.

THE TREATMENT OF ICTERIC SPIROCHÆTOSIS.

Dr. Marcel Garnier's comprehensive survey, in the French Supplement to the present issue of THE LANCET, of the work done by his compatriots during the last three years in the field of disease caused by the *Spirochæta icterohæmorrhagiæ* contains no allusion to therapeutic measures. There has indeed been little time for the development of any useful experience in this direction, but at the Pasteur Institute in Paris MM. L. Martin and A. Pettit[1] have prepared an antispirochætosis serum by injecting, at the outset of their investigations, emulsions of guinea-pig liver, and, later, pure spirochæte cultures, into horses. The serum of animals prepared in this way acquired a moderate agglutinating power and manifestly immunising and spirochæte-destroying properties. The same workers also obtained a serum, a dose of 1/20th c.cm. of which neutralised 1 c.cm. of a thick emulsion of the parenchyma of guinea-pig liver rich in spirochætes. Several observers have made use of the serum thus prepared. Dr. Garnier himself employed it in 13 cases, coming to the conclusion that, under the conditions in which he was placed and with the doses he used, the serum did not seem to have any obvious action on the development of I.Sp. But in one case N. Fiessinger and E. Leroy obtained marked amelioration. S. Costa and J. Troisier used the serum in a grave case of meningitic type, when the patient recovered after receiving the serum subcutaneously and intrathecally. Renaux, and later Wilmaers, obtained encouraging results in the Belgian army, observing that the elimination period of the parasite was substantially reduced. Finally, in a case treated by Nolf and Firket the injection of serum into the spinal theca was followed by considerable improvement. From these facts MM. Martin and Pettit conclude that when faced

[1] L. Martin et A. Pettit: La spirochétose ictéro-hémorragique, Paris, 1919; Le sérum contre la Spirochéta de l'ictére hémorragique, Bull. Soc. méd. Hôp., Nov. 23rd, 1917.

by an ascertained infection with I.Sp. specific serotherapy should be adopted without delay. The technique which they propose is to inject on the first day a dose of 60 c.cm. under the skin, followed by injections of 20 to 40 c.cm. each every two or three days. The treatment must be regarded as being still in the experimental stage.

THE DECLINE OF ALCOHOLISM IN GERMANY DURING THE WAR.

THE decline of alcoholism during the war to which several previous writers have drawn attention is illustrated by Dr. Schweisheimer,[1] of Munich, who gives the following figures: The number of male patients under treatment for alcoholism in public and private asylums in Germany was 3148 on Jan. 1st, 1914, and only 1896 on Dec. 31st, 1916, and the number of female alcoholics fell during the same period from 382 to 295. The decline in the number of fresh admissions for alcoholism was still greater, the male admissions being 6380 in 1914 and 1986 in 1916, and the female admissions 541 in 1914 and 280 in 1916. In striking contrast with these figures was the absence of any change in the relative frequency of mental diseases not due to alcoholism. Thus the percentage of male admissions for dementia præcox to the Berlin Charité Hospital was 8·3 in 1912, 8·8 in 1915, and 8·0 in 1916; and of female admissions, 14·4, 16·0, and 13·0 during the same years, showing that the war had no effect upon this disease.

THE PERILS OF THE RADIOLOGIST.

THE tragic death by electrocution of a radiologist in Paris draws attention to the rarity of such accidents, a sufficiently remarkable fact when we consider the enormous voltages used in the ordinary course of radiological work. To receive a shock from some part of his apparatus is the frequent experience of nearly every busy X ray operator, and produces as a rule little more than a momentary annoyance. The reason for this is that the great majority of such shocks are from one terminal only, the amount of current transmitted to the body being limited to its capacity as a condenser, which is small; and this is especially so if the apparatus is installed in an ordinary room with a floor of dry wood or covered with thick linoleum. Uncovered floors of concrete allow direct leakage of current to earth and materially increase the severity of any shock; they should not be permitted in an X ray room. Apart from this question of floor material, it occasionally happens through the development of faulty insulation that the operator becomes connected with both terminals of the coil, and this is a very unpleasant experience. Conceivably such an occurrence might be immediately fatal in the case of an individual with a weak heart; in normal persons, however, the effects pass off rapidly and are soon forgotten. While the tension or voltage is high, the quantity of current from an induction coil is very small, due less to the high resistance of the secondary winding than to self-induction and impedance. The available current can never rise above a limited number of milliampères, and as the induction coil is the most generally used means of exciting the X ray tube, herein lies the explanation of the radiologist's immunity from fatal accident.

[1] Öffentliche Gesundheitspflege, 1919, iv., 256-260.

To meet the demand for rapid exposures, something more powerful than the induction coil was needed, and this led to the introduction of the high-tension transformer with its closed magnetic circuit and rectifying device for keeping the current impulses through the tube unidirectional. By its employment a greatly increased current passes through the X ray tube, and the risks to the operator are proportionately increased in the event of personal contact with one or both terminals when the machine is working at anything approaching its full power. The necessary precautions for the avoidance of accident are well known to instrument-makers and to radiologists who use this type of machine, and the circumstances of the Paris accident suggest that some recognised safeguards were not observed. The room was too small to allow sufficient freedom of movement clear of the apparatus, the high-tension wires were hanging in a dangerous position, the tube stand was of metal and not earthed, and the floor was of concrete. A movement of the stand brought it in contact with the high-tension wire, allowing the current a free passage to earth through the body of the radiologist —with the natural, and almost inevitable result. The tragedy should lead to more care in the installation and use of high-power X ray generators.

PUBLIC HEALTH CONGRESS IN BRUSSELS.

THE resumption of the annual meetings of the Royal Institute of Public Health will be welcomed not only by those who habitually attended these congresses, but also by the largely increased number of people now interested in public health problems. The congress was held at Berlin in 1912, and at Paris in 1913. The Edinburgh meeting in 1914, at which the medal given by the institute for conspicuous service in the cause of preventive medicine was awarded to Dr. James Niven, M.O.H. of Manchester, for his work towards the prevention of tuberculosis, was the last meeting held. A renewed invitation from Burgomaster Adolphe Max, of Brussels, and from the rectors of the Universities of Belgium, has been accepted by the President and Council, and the next congress will be held at Brussels in 1920, from May 20th to 24th inclusive. Delegates from the universities, municipalities, and public bodies will be invited in due course, and full particulars, presumably including a preliminary programme, will be issued shortly. Those who wish to participate in the congress are asked to communicate with the honorary secretaries, the Royal Institute of Public Health, 37, Russell-square, London, W.C. 1.

COMBATING CANCER.

Professor Alexander Fraenkel, secretary of the Austrian Society for Combating Cancer, has performed a public service by giving an excellent review of the present position and prospects of the cancer problem in an article[1] entitled "The Curability of Cancer" in a recent number of the principal Vienna medical journal. The pathological facts of human and animal cancer and the results of experimental study of the disease are set out clearly and in detail, and focussed to the conclusion that the disease is local in origin. Due prominence is given to the part played by chronic irritation and the great variety of forms which this factor may take, ranging from chemical irritants to gross

[1] Ueber die Heilbarkeit der Krebskrankheit, Wien. klin. Wochenschr., Nov. 13th, 1919.

metazoan parasites, such as bilharzia and the spiroptera found by the Danish investigator, Fibiger, associated with cancer of the stomach in rats. Fraenkel regards this variety in origin as practically excluding a parasitic ætiology of cancer, and he goes on to remark acutely that the same variety in the predisposing factors renders any attempt at a specific cancer prophylaxis nugatory, apart from a general improvement in the prevention of all diseases. The rare cases of spontaneous cure of cancer, and the more numerous instances of success after incomplete operations, are regarded as of the most happy augury for success in the ultimate triumph of a rational therapy. Early and complete removal is emphasised as still the most successful method of treatment, full recognition being given at the same time to the brilliant results of radiotherapy in suitable cases. Fraenkel then goes on to an account of the chemo-therapeutic experiments of von Wassermann and others, emphasising the necessity of improved methods of diagnosis early in the disease and of research in this direction. The article concludes with a severe indictment of the extravagant claims of Adamkiewicz to have produced a practically infallible cure with his cancroin, the soluble toxin of a supposed protozoan parasite of cancer. The danger to the credulous public from such irresponsible claims is not less in other countries than in Austria, and, shorn of its verbose and florid style, an article conceived on similar lines and circulated broadcast might do something to put down the raising of false hopes by interested people, and to encourage the efforts of those who, without hope of material reward, are seeking the solution of one of the most fascinating, as well as one of the most serious, problems in medicine.

INFLUENZA AND TUBERCULOSIS.

DEALING with the death-rate at institutions under their supervision the Commissioners of the Board of Control noted in their report for the year 1918 that the increase in the number of deaths among the insane, as compared with 1917, was due mainly to influenza and tuberculosis, although they did not suggest any connexion between the two diseases except in so far as both were regarded as dependent on "weakened physical resistance" due to war conditions. Some asylum medical officers, however, accept a more intimate relation—e.g., Dr. F. A. Elkins and Dr. H. H. Thomson in their paper on the Incidence of Tuberculosis Amongst Asylum Patients in THE LANCET of August 9th include as contributory causes "the occurrence of outbreaks of influenza and pneumonia during 1917, and more especially in 1918." It is, of course, difficult to eliminate with certainty the *post hoc ergo propter hoc* fallacy, owing to the extent of the influenza epidemic in some institutions, for it would be hard to find among the inmates of older standing any developing tubercle during 1919 who had not suffered from influenza during the preceding year. An article which has recently appeared in *Lyon Médical*[1] lends a little more exactitude to the available evidence. Dr. Roubier has investigated three classes of cases: (1) those in which there is a prolongation of the illness simulating tuberculosis; (2) cases of tuberculosis definitely appearing after influenza; and (3) cases of influenza in patients already suffering from tubercle. He recognises, thus confirming the teaching of Professor J. Teissier and others, that some cases of influenza present persistent physical signs of apical bronchitis or basal cavity formation or pneumonia. Among 91 patients sent to him with suspicious bronchitis following influenza he found 12 (13·2 per cent.) in whom a diagnosis of tubercle was confirmed. In some of these there was a *phase grippale* with a subsequent stage of apyrexia lasting for various periods up to a month, and finally a regular evolution of tuberculosis on the usual lines. In some instances the incidence of the tuberculous affection was chiefly upon the pleura, but in none was meningitis observed. As regards the effects of influenza upon patients already suffering from pulmonary tuberculosis, it was found that, while the influenza exerted a generally unfavourable influence, the results were in some cases negligible.

[1] Grippe et Tuberculose, par le Médecin-major de 2e classe Ch. Roubier, Lyon Médical, September-November, 1919, Nos. 9-11.

VOLUNTARY HOSPITAL FINANCE.

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by an ascertained infection with I.Sp. specific serotherapy should be adopted without delay. The technique which they propose is to inject on the first day a dose of 60 c.cm. under the skin, followed by injections of 20 to 40 c.cm. each every two or three days. The treatment must be regarded as being still in the experimental stage.

THE DECLINE OF ALCOHOLISM IN GERMANY DURING THE WAR.

THE decline of alcoholism during the war to which several previous writers have drawn attention is illustrated by Dr. Schweisheimer,[1] of Munich, who gives the following figures: The number of male patients under treatment for alcoholism in public and private asylums in Germany was 3148 on Jan. 1st, 1914, and only 1896 on Dec. 31st, 1916, and the number of female alcoholics fell during the same period from 382 to 295. The decline in the number of fresh admissions for alcoholism was still greater, the male admissions being 6380 in 1914 and 1986 in 1916, and the female admissions 541 in 1914 and 280 in 1916. In striking contrast with these figures was the absence of any change in the relative frequency of mental diseases not due to alcoholism. Thus the percentage of male admissions for dementia præcox to the Berlin Charité Hospital was 8·3 in 1912, 8·8 in 1915, and 8·0 in 1916; and of female admissions, 14·4, 16·0, and 13·0 during the same years, showing that the war had no effect upon this disease.

THE PERILS OF THE RADIOLOGIST.

THE tragic death by electrocution of a radiologist in Paris draws attention to the rarity of such accidents, a sufficiently remarkable fact when we consider the enormous voltages used in the ordinary course of radiological work. To receive a shock from some part of his apparatus is the frequent experience of nearly every busy X ray operator, and produces as a rule little more than a momentary annoyance. The reason for this is that the great majority of such shocks are from one terminal only, the amount of current transmitted to the body being limited to its capacity as a condenser, which is small; and this is especially so if the apparatus is installed in an ordinary room with a floor of dry wood or covered with thick linoleum. Uncovered floors of concrete allow direct leakage of current to earth and materially increase the severity of any shock; they should not be permitted in an X ray room. Apart from this question of floor material, it occasionally happens through the development of faulty insulation that the operator becomes connected with both terminals of the coil, and this is a very unpleasant experience. Conceivably such an occurrence might be immediately fatal in the case of an individual with a weak heart; in normal persons, however, the effects pass off rapidly and are soon forgotten. While the tension or voltage is high, the quantity of current from an induction coil is very small, due less to the high resistance of the secondary winding than to self-induction and impedance. The available current can never rise above a limited number of milliampères, and as the induction coil is the most generally used means of exciting the X ray tube, herein lies the explanation of the radiologist's immunity from fatal accident.

To meet the demand for rapid exposures, something more powerful than the induction coil was needed, and this led to the introduction of the high-tension transformer with its closed magnetic circuit and rectifying device for keeping the current impulses through the tube unidirectional. By its employment a greatly increased current passes through the X ray tube, and the risks to the operator are proportionately increased in the event of personal contact with one or both terminals when the machine is working at anything approaching its full power. The necessary precautions for the avoidance of accident are well known to instrument-makers and to radiologists who use this type of machine, and the circumstances of the Paris accident suggest that some recognised safeguards were not observed. The room was too small to allow sufficient freedom of movement clear of the apparatus, the high-tension wires were hanging in a dangerous position, the tube stand was of metal and not earthed, and the floor was of concrete. A movement of the stand brought it in contact with the high-tension wire, allowing the current a free passage to earth through the body of the radiologist —with the natural, and almost inevitable result. The tragedy should lead to more care in the installation and use of high-power X ray generators.

PUBLIC HEALTH CONGRESS IN BRUSSELS.

THE resumption of the annual meetings of the Royal Institute of Public Health will be welcomed not only by those who habitually attended these congresses, but also by the largely increased number of people now interested in public health problems. The congress was held at Berlin in 1912, and at Paris in 1913. The Edinburgh meeting in 1914, at which the medal given by the institute for conspicuous service in the cause of preventive medicine was awarded to Dr. James Niven, M.O.H. of Manchester, for his work towards the prevention of tuberculosis, was the last meeting held. A renewed invitation from Burgomaster Adolphe Max, of Brussels, and from the rectors of the Universities of Belgium, has been accepted by the President and Council, and the next congress will be held at Brussels in 1920, from May 20th to 24th inclusive. Delegates from the universities, municipalities, and public bodies will be invited in due course, and full particulars, presumably including a preliminary programme, will be issued shortly. Those who wish to participate in the congress are asked to communicate with the honorary secretaries, the Royal Institute of Public Health, 37, Russell-square, London, W.C. 1.

COMBATING CANCER.

Professor Alexander Fraenkel, secretary of the Austrian Society for Combating Cancer, has performed a public service by giving an excellent review of the present position and prospects of the cancer problem in an article[1] entitled "The Curability of Cancer" in a recent number of the principal Vienna medical journal. The pathological facts of human and animal cancer and the results of experimental study of the disease are set out clearly and in detail, and focussed to the conclusion that the disease is local in origin. Due prominence is given to the part played by chronic irritation and the great variety of forms which this factor may take, ranging from chemical irritants to gross

[1] Öffentliche Gesundheitspflege, 1919, iv., 256–260.

[1] Ueber die Heilbarkeit der Krebskrankheit, Wien. klin. Wochenschr., Nov. 13th, 1919.

metazoan parasites, such as bilharzia and the spiroptera found by the Danish investigator, Fibiger, associated with cancer of the stomach in rats. Fraenkel regards this variety in origin as practically excluding a parasitic ætiology of cancer, and he goes on to remark acutely that the same variety in the predisposing factors renders any attempt at a specific cancer prophylaxis nugatory, apart from a general improvement in the prevention of all diseases. The rare cases of spontaneous cure of cancer, and the more numerous instances of success after incomplete operations, are regarded as of the most happy augury for success in the ultimate triumph of a rational therapy. Early and complete removal is emphasised as still the most successful method of treatment, full recognition being given at the same time to the brilliant results of radiotherapy in suitable cases. Fraenkel then goes on to an account of the chemo-therapeutic experiments of von Wassermann and others, emphasising the necessity of improved methods of diagnosis early in the disease and of research in this direction. The article concludes with a severe indictment of the extravagant claims of Adamkiewicz to have produced a practically infallible cure with his cancroin, the soluble toxin of a supposed protozoan parasite of cancer. The danger to the credulous public from such irresponsible claims is not less in other countries than in Austria, and, shorn of its verbose and florid style, an article conceived on similar lines and circulated broadcast might do something to put down the raising of false hopes by interested people, and to encourage the efforts of those who, without hope of material reward, are seeking the solution of one of the most fascinating, as well as one of the most serious, problems in medicine.

INFLUENZA AND TUBERCULOSIS.

DEALING with the death-rate at institutions under their supervision the Commissioners of the Board of Control noted in their report for the year 1918 that the increase in the number of deaths among the insane, as compared with 1917, was due mainly to influenza and tuberculosis, although they did not suggest any connexion between the two diseases except in so far as both were regarded as dependent on "weakened physical resistance" due to war conditions. Some asylum medical officers, however, accept a more intimate relation—e.g., Dr. F. A. Elkins and Dr. H. H. Thomson in their paper on the Incidence of Tuberculosis Amongst Asylum Patients in THE LANCET of August 9th include as contributory causes "the occurrence of outbreaks of influenza and pneumonia during 1917, and more especially in 1918." It is, of course, difficult to eliminate with certainty the *post hoc ergo propter hoc* fallacy, owing to the extent of the influenza epidemic in some institutions, for it would be hard to find among the inmates of older standing any developing tubercle during 1919 who had not suffered from influenza during the preceding year. An article which has recently appeared in *Lyon Médical*[1] lends a little more exactitude to the available evidence. Dr. Roubier has investigated three classes of cases: (1) those in which there is a prolongation of the illness simulating tuberculosis; (2) cases of tuberculosis definitely appearing after influenza; and (3) cases of influenza in patients already suffering from tubercle. He recognises, thus confirming the teaching of Professor J. Teissier and others, that some cases of influenza present persistent physical signs of apical bronchitis or basal cavity formation or pneumonia. Among 91 patients sent to him with suspicious bronchitis following influenza he found 12 (13·2 per cent.) in whom a diagnosis of tubercle was confirmed. In some of these there was a *phase grippale* with a subsequent stage of apyrexia lasting for various periods up to a month, and finally a regular evolution of tuberculosis on the usual lines. In some instances the incidence of the tuberculous affection was chiefly upon the pleura, but in none was meningitis observed. As regards the effects of influenza upon patients already suffering from pulmonary tuberculosis, it was found that, while the influenza exerted a generally unfavourable influence, the results were in some cases negligible.

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sum of £50,000, in the other of £25,000, was announced as the immediate result of the festivity. King's College Hospital has appealed for the million and a half population of South London. These are good beginnings, but it will require the fulfilment of the task through hours of gloom to save the voluntary system if it is to be saved.

FATALITIES FOLLOWING SALVARSAN.

Dr. Wyndham B. Blanton,[1] writing from the Base Hospital, Camp Custer, Michigan, records four fatalities in healthy young men aged from 24 to 29 following a course of salvarsan treatment consisting of four to six intravenous doses. There was an average interval of four days between each injection; 0·4–0·6 g. salvarsan was given at a time. Two days in three cases and three days in the fourth intervened between the time of the last salvarsan treatment and the onset of the illness. The symptoms and post-mortem findings were closely similar in each case. After a latent period of about two days a sudden and profound coma developed and dominated the clinical picture so that it was difficult to elicit any focalising symptoms at all. There were no cranial nerve palsies. The pupils were dilated in two cases, and in two unaffected. During the last 24 hours of life the reflexes disappeared in all four cases. Two patients had convulsions. Cheyne-Stokes breathing was present in all and death was apparently due to failure of the respiratory centre. The lesions in the brain in each case consisted of minute hæmorrhages confined to the basal nuclei and that part of the cerebrum bounding the lateral ventricles, and were associated with softening confined to this site. There were marked cerebral œdema and congestion. In only one case was there slight fatty degeneration of the liver. Dr. Blanton attributes the fatalities to the toxic by-products of salvarsan synthesis, the exact nature of which is unknown. The technique could be exonerated, as hundreds of other injections were given by the same method without reaction.

MALINGERING AND THE SIMULATION OF DISEASE.

IN the December number of *Medical Science: Abstracts and Reviews*, published for the Medical Research Committee by the Oxford University Press, there is a résumé of an interesting paper which appeared in the *Münchener Medizinische Wochenschrift* on malingering in Russia during the war. Mende, the writer of the article, met with 1200 cases in a little over two years in which soldiers had self-inflicted injuries. The most common were artificial swellings produced by the injection of liquid paraffin or paraffin mixed with vaseline. The swellings so produced varied in size from a hazel nut to a child's head. They were situated most commonly over the knee or ankle, but they were found in almost any part of the body. The swellings were always superficial, and though fixed to the skin they could be moved easily over the deeper parts. The neighbouring lymphatic glands were swollen and painful. The tumours were at first painful, but the pain gradually died away and the swelling itself disappeared after about a year's duration. The malingerer generally attributed it to a kick or a fall, but in some cases the paraffin and the syringe were found. The only method of removing the swelling was excision. Many ways of producing an ulcer are described, some more and some less painful. Œdema of a limb was induced by means of a tight band, and if a broad band like a handkerchief were used no mark was left. The subcutaneous injection of benzene gave rise to an acute inflammatory œdema with a widespread erythema; over the points of injection in a day or two appeared bullæ filled with turbid fluid, and necrosis of the skin developed underneath them, while in some cases there was extensive sloughing. Rectal prolapse was produced by the insertion into the rectum of a bag of dried peas; when the peas had swollen by the absorption of water the bag was drawn out and with it the mucous membrane was brought down. Acute blepharitis and conjunctivitis were produced by rubbing the eyes with urine, or by the insertion of a foreign body, such as a gramophone needle, beneath the lid. True nephritis was produced by taking potassium chlorate, but blood in the urine was often due to injuring the urethra by means of a pointed instrument. There were five cases in which an artificial jaundice was produced by picric acid poisoning; and one case died. The symptoms were headache, loss of appetite, constipation, and pain in the region of the liver; the skin and mucous membranes were tinged yellow as in natural jaundice, but there were no other symptoms associated with the jaundice, for the fæces were normal in colour and the dark red urine contained no bile pigments, though it gave reaction of picric acid for a long time. A simple test was to soak a strand of silk in the urine for five minutes; it became tinged yellow and the colour could not be removed even by prolonged washing. One patient stated that for four days he had taken a small crystal of picric acid, but this was not a fatal case. The knowledge of the army surgeon, if he is to detect even half of the malingerers and simulators that come before him, must be very wide.

[1] American Journal of Syphilis, 1919, iii., 648–660.

AT the recent session of the General Medical Council it was decided to inspect the examinations of the universities and corporations for diplomas or certificates for proficiency in sanitary science, public health, or State medicine in the course of the next two years. Dr. Robert Bruce Low, C.B., has been appointed the Council's inspector for this purpose.

STANDARD SOLUTIONS FOR ESTIMATING THE REACTION OF CULTURE MEDIA.—It has been found that a large demand exists for a supply of sets of standard solutions for estimating the reaction of culture media. These solutions may be made in accordance with the directions given in the report on the Reaction of Media, by the Committee upon Pathological Methods, recently issued by the Medical Research Committee (Special Report Series, No. 35), but it appears that many workers would welcome an opportunity of purchasing sets ready for use. The Medical Research Committee accordingly have come to an arrangement with Messrs. Baird and Tatlock whereby the latter have placed sets of these standard solutions on the market at an approved price, the actual making and testing of the solutions being performed under the Committee's direction. The sets are at present of two kinds, one (with phenol red as indicator) having a range of P_H 6·6 to P_H 8·0 and the other (with bromcresol purple as indicator) having a range of P_H 5·4 to P_H 6·8. The solutions have been electrometrically controlled and are permanent if kept protected from light. Each set consists of eight hermetically sealed tubes in a wooden block, and is sold at the price of 10*s.* 6*d.* An outer case to hold one set can be supplied at an additional cost of 8*s.* 6*d.* Indicator solutions to be used with these standards are also obtainable from the same firm and are made up in duro-glass flasks, each containing 50 c.cm. All inquiries should be addressed to Messrs. Baird and Tatlock, Ltd., 14–15, Cross-street, Hatton Garden, London, E.C.1.

THE BELGIAN DOCTORS' AND PHARMACISTS' RELIEF FUND:

ADDRESS BY DR. PECHÈRE.

A MEETING of the constituents of the Belgian Doctors' and Pharmacists' Relief Fund was held on Monday last, Dec. 15th, at the house of the Royal Society of Medicine, 1, Wimpole-street, London, to hear an address from Dr. V. PECHÈRE, the President of the National Relief Committee (Aide et Protection aux Médecins et Pharmaciens Belges Sinistrés), the body which, sitting in Brussels throughout the war, distributed the money received from the British Fund and other analogous organisations. The meeting was necessarily small as Dr. Pechère's arrival was unexpected, and but little notice of it could be given publicly.

Sir RICKMAN GODLEE, the chairman of the British Fund, introduced Dr. Pechère in a few words, saying that the audience, which knew by the regular accounts in the press all the details of the collection of the Fund, would hear from the speaker how the money had been distributed at the other end. He referred to his personal knowledge of the good that had been done, which was derived from the perusal of many grateful letters from beneficiaries.

Dr. Pechère addressed the meeting as follows:—

A Belgian writer has said during the war: "I would give a good part of my life to see a happy man." Well, ladies and gentlemen, you can see one without giving anything. Look at me. I am that man. Yes, I am quite happy, because I am realising a dream that I have dreamt many times during the war and many more times since. This dream was to cross to England and thank the whole English nation, and specially you, for all you have done for us during the terrible years we had to live in Belgium. And now, I am here, on this old English earth which was so hospitable to so many of my countrymen; I am now before those women and those men who have given without counting not only of their goods but also of their time and their trouble, and, above all, of their hearts to the Belgian soldiers, refugees, and exiles; to the first because they had so well defended their country, to the others because they had been driven out therefrom by a brutal invader.

The Gratitude of Belgium.

How should I not be happy? Among those unhappy people were many who belonged to the medical and pharmaceutical professions, and it is specially to these that you have extended your sympathy and your succour. In addition, it is a great pleasure, and not less an honour, for me to be here as their representative to say "Thank you." Thank you, Mr. President, who have given to the Committee the honour of your authority. Thank you, Dr. Des Vœux and Dr. Squire Sprigge, who were the mainstay of this work, and whose perpetual devotion has assured its complete development. Thank you, gentlemen of the Committee, those whom I know and those whom I do not know, who were always at the side of these indefatigable officers to help them in their charitable mission. Thank you, also, ladies and gentlemen, present or absent, English, Welsh, Irish, Scotch, or of the Dominions overseas, who were as united in this philanthropic crusade as you were on the battlefields, and without whom the goodwill of the workers would have remained inoperative. As long as the war remains in the mind of the Belgians—and it will live eternally—neither the medical nor the pharmaceutical profession will ever forget what you have done for us. Your generosity is the greater in that you have given without any mental reservation, without knowing, most of the time, what was being done with your gifts. For that lack of information I have to apologise. I may assure you that in our committee, which we have always considered as a branch of yours, we have done all in our power to give you details of our actions.

The Situation in Belgium after the Invasion.

We have tried many times to send you our regular reports; we know that often you did not get them. We appealed for the assistance of the American Relief Committee, and they told us that the Germans did not allow our papers to reach England. So you remained quite ignorant of our work, and for that reason I thought that you would be interested now to hear something of it. As a matter of fact I am unexpected here to-day. I shall have to come officially at the end of December or the beginning of January. But since I was obliged to come now as well, I realised that my first duty on reaching England was to meet you and tell you of my personal gratitude and that of my friends. We hope that one of us may pay you an official visit in the future. But if you will allow me I will take this opportunity to say a few words on the situation in which you have given us your kind support. At the end of August, 1914, when we heard of the destruction and the atrocities committed in Eastern Belgium by the Germans, we tried to establish a committee of salvation for our confrères sinistrés. But at that moment it was very difficult, if not quite impossible, to get any exact information about what had happened. The difficulties of leaving Brussels were enormous, for one had first to get a permit from the occupation authorities. A passport could only be obtained if it were for official purposes specified in detail. If a man were happy enough to get one, he was subjected to an incessant personal supervision. Railways were not available; the trains were commandeered by the German military forces. Moreover, the battle was raging between Brussels and Antwerp, between Brussels and Namur. All the roads were picketed, and Red Cross cars only were allowed to pass, with special licence, of course. Even then one was obliged to stop every moment to exhibit papers. It very often took two hours to travel six miles. In each village a report had to be made to the Commandantur. Moreover, a traveller was always in suspicion, the officer or his attendant kept him under supervision, and very often he was sent back. Of course, no explanations were ever given. Entrance into or exit from destroyed towns, such as Andenne, Dinant, Tamines, Aerschot, was formally forbidden. There was no postal service, much less telegraph or telephone. It was the beginning of the prison régime. Briefly, it was impossible for us to realise our plan to keep in touch with you.

Those whom the Fund Succoured: a Tale of Horror.

I pass on to the day when we heard from Dr. Jacobs of your establishment of the Belgian Doctors and Pharmacists' Relief Fund. I need not now explain to you how we have managed our work. I think you know it from our reports and letters. We got by subscriptions in our country about 180,000 francs (£7500), we got from foreign lands about 100,000 francs (£4000) and from your fund about £27,000. With this sum we were able to save about 140 families; that means more than 400 persons, among whom were many children. Now, what are the reasons that called for our intervention? Firstly, the disappearance of the head of the family. Among those killed by the Germans were five doctors. One in Andenne, Dr. Camus, was the burgomaster of that little city. When the German regiments took possession of the town they began to plunder, and, as was their custom, they took all the men, the burgomaster first of all. He was made responsible for all that subsequently happened. The soldiers were not in the place more than an hour when a fusillade took place. It was the beginning of the massacre. Why? Because "Man hat geschossen." You know it was the *mot d'ordre*. Let me tell you it was never true. There have never at any moment been any franc-tireurs in Belgium. In the first days of the war the authorities had enjoined the civil population, by notices, by posters, and so on, not to cause any trouble and not to make use of firearms. It is possible that perhaps, in isolated areas, a shot was fired. I say it is possible, but it was never proved. "Man hat geschossen" was the signal of the massacre, which had actually been prepared in cold blood by the staffs; also of the plunder and the fires. Many such plans were made and the same excuse was given. In other places there had been Belgian soldiers, or even French ones, who, while defending the place, had killed some of the enemy. In many of these cases the inhabitants were accused of having participated in the battle, and that was the reason given for the subsequent murders. This occurred in Dinant and Tamines, for you must know that hundreds of people in each of these little towns were put against the wall and shot—old people, men, women, and children, all together. Among those at Dinant were two pharmacists and two at Tamines, of whom one died ten days later from his wounds. As for Dr. Camus, he was fired on, kicked, lashed. His corpse was drawn round the streets, hoisted on the bridge of the Meuse, and, as it is said, thrown in the river. Another doctor was killed in Canthée, one in Hastière, one near Dinant, and one in Spontin, a little village not very far from Dinant. Eight pharmacists were killed in the same way. I know the story of all of them, because I have heard it from their relatives or other eye-witnesses. One of them was told me by the widow of the victim, the pharmacist, Guilitte, of Andenne. May I tell it to you in few words? When the searching for the men began M. Guilitte, his brother-in-law, and his son, aged about 18, succeeded in escaping and in reaching the office, where his wife and another son, a boy of about 6, had been taken, paralysed by fear. The men shut themselves up in the cellar. Some minutes after came three German soldiers. "There is somebody hiding here." No, was the answer of the poor woman. They covered her face with their revolvers. No, she said again. Then one of those beasts held the woman on a chair while the two others

went straight down to the cellar. They broke open the door with the butt-end of their rifles and found the three inmates. Nobody knows exactly what happened then, but the poor woman heard clamours and a noise of fighting and shots. When she saw the corpses afterwards she found them riddled by shot and pierced by bayonet wounds. That was the fate of about 80 doctors and as many pharmacists, while many were plundered and their houses destroyed by bombs, shells, or fire.

Medicine at its Post.

What has now become of most of these poor people? Nearly the whole population of the cities or the destroyed villages had been forced to flee. Only the poorest have remained in the houses which had not been burned or demolished.

But it was the duty of certain men to stay. There were the doctors and the clergymen and those in authority. They did stay, and also those pharmacists who had still somewhere to live and had kept some of their materials. Many of the doctors and chemists had one or more children. They were deprived of everything. Very often the only clothes they had were on their shoulders. Their money had been stolen, and they were as poor as their fellows. That is to say, they had nothing at all. Even had any citizens retained some of their possessions, it was surely impossible, for the doctors at any rate, to solicit their aid. The doctors are there, are they not, to help the people, rich or poor, not to be helped by them? The doctors were, moreover, not only deprived of their possessions, but owing to the general poverty they remained unpaid for their work, which increased daily. Their position made it impossible for them to ask for the charity dispensed to the labouring classes, and their need was in many cases greater. These were the men who were helped by your Fund. Our Committee supplied them with food, with clothing, and with coal; and since the end of the war we have in many cases helped them to rebuild their surgeries and their shops. If I could make you realise the conditions under which they lived and worked during the war you would better appreciate what your generosity has done for us.

The Call of Duty to Humanity.

I think I have said enough about the material side. I would like to add one word as to the mental distress in which these poor men lived. They were in most cases completely isolated from their confrères, and they were obliged to see the health of the people rapidly deteriorating owing to the absence of food, drugs, and medical appliances. For instance, the percentage of deaths from tuberculosis, which was before the war 16 per 1000 rose in 1918 to 34 per 1000. Intellectual life ceased and we were obliged to live under a rule which was hateful and which we felt to be degrading. Of the many reasons we had for hating the Germans their efforts to debase the population was the strongest.

Dr. Pechère concluded by saying: "When I was a little boy, there hung in my room the picture of the deck of a battleship, under which was written 'England expects every man to do his duty.' In the great war England has done her duty, and done it splendidly, to herself, to Belgium, and to humanity, and Belgium will never forget it."

A vote of thanks to Dr. Pechère for his moving address was proposed by Dr. SQUIRE SPRIGGE, and seconded by Dr. H. A. DES VŒUX, who said that the great exploit of the Fund was performed in its last year. In that year the Fund received over £4000 from subscribers, although those responsible for its distribution could give no positive assurances to the constituency of how the money was being spent. Such information as was now and again forthcoming—and for a period of 18 months it ceased entirely—showed that the money arrived and was being well spent; so the subscribers trusted and gave.

Sir RICKMAN GODLEE, in putting the vote of thanks to the meeting, said that the assistance of Mr. C. Hoover in the early stages and of the American Red Cross in the closing period had been invaluable to the Fund.

The vote of thanks being carried with acclamation, Dr. PECHÈRE briefly replied, stating that his Committee still had a little money in hand and many claimants upon their assistance.

Dr. ALFRED COX proposed a vote of thanks to Sir Rickman Godlee for presiding, and added that the Fund owed a deep debt to its chairman of Committee for his energy and sagacity in the conduct of business.

This having been seconded by Dr. DE HAVILLAND HALL, the meeting terminated.

BRITISH FEDERATION OF MEDICAL AND ALLIED SOCIETIES:

AN INTERESTING CONFERENCE.

UNDER the auspices of the Federation of Medical and Allied Societies (late Medical Parliamentary Committee) a conference was held in the Steinway Hall, Lower Seymour-street, London, on Dec. 12th, under the chairmanship of Sir MALCOLM MORRIS, to consider the draft regulations for insurance practice. In opening the proceedings the chairman explained that the Federation was not formed in antagonism to any existing society, but marked, for the first time in the history of medicine, the combination of the three sides of medicine—namely, practitioners, nurses, and pharmaceutical chemists. The aim of the Federation was to encourage medical men to take their proper position in the social work of the nation in the House of Commons and on municipal bodies. He then read to the meeting a communication from Sir W. Watson Cheyne, M.P., a former chairman of the Federation, who stated that he was glad to hear that the Federation proposed to discuss the draft regulations, as it was difficult to find out how far matters had gone under piecemeal methods, while the whole situation should be considered together, and any increased payments made retrospective. Sir Watson Cheyne described the idea of legislation as being "to avoid opportunities of discussion in Parliament, and to push things through by orders and rules which can never be properly controlled by the House," and suggested that the conclusions arrived at by the conference might be discussed with the committee of medical Members whom he would summon for the purpose. A communication was also received from Captain F. E. Guest, Chief Liberal Whip, who promised a sympathetic attitude on the part of the Prime Minister towards the suggested deputation.

Criticism of the National Health Insurance Act.

Dr. E. H. M. STANCOMB said the medical profession had had some years of experience of service under the National Health Insurance Act, and was now in a position to judge it, and, in his opinion, to condemn it, the grounds being the absence of adequate equipment, clinical, surgical, pathological, and ancillary, the form of consultant and nursing service, together with the restrictions as to drugs, appliances, and other things which were necessary for efficiency. The Ministry of Health had a medical service incapable of securing efficiency on the part of the practitioner with inadequate results to the community. In such conditions the panel practitioner was threatened with delegation to an inferior grade. He was dispossessed of a due share in the administration of his industry, and was approaching bureaucratic slavery. The Great War had demonstrated what organised medical service upon an adequate scale could do, and whoever won the war medical service saved it. With this knowledge before them the profession might expect from the Ministry of Health something better than a perpetuation of past weakness with only slight, if favourable, variations. The new regulations bore no evidence of any grasp on the fundamental question of national health viewed from the preservative side. He hoped that the conference would voice an insistent demand for efficiency and freedom. By efficiency he understood proper equipment, and endowment for the best scientific service; and by freedom the granting of such administrative power to the medical profession in local autonomous areas as would enlist the whole-hearted interest of practitioners in their task of paramount importance. He believed that along the lines of our existing educational system would be found the means of conferring local autonomy with central control, thus securing efficiency and freedom.

Dr. J. F. GORDON DILL commenced by saying that it was reasonably certain that a large body of the medical profession and of the general public did not find the provisions for medical treatment under the National

Insurance Act were sufficient to ensure the prevention and arrest of early disease. He did not think that anyone could seriously assert that the medical profession had been advanced either in scientific acquirements, facility for good work, or prestige in public estimation by the panel system, while the relations between the doctor and his patient were in no way bettered by the new regulations. He deplored the absence of personal interest in his charges brought about by the regulations, but he thought that the opportunity which the profession had had to assume the proper position in the forces of the State might still be taken advantage of, adding that now was the time to act, before a large number of new practitioners were involved in unsatisfactory terms of service. He asked, was it a fantastic dream to think that every doctor might be assured of a sufficient and increasing competence to continue to do good work for the State, obtaining regular holidays and a pension to look forward to? And he thought that the medical profession, while criticising the regulations, had undertaken the responsibility of putting forward a concrete scheme for proper medical service.

Dr. FRANK COKE, the President of the Medico-Political Union, heartily agreed with the views of Dr. Stancomb.

Mr. P. F. ROWSELL, representative of the Pharmaceutical Society, also agreed in the main with the previous speakers. The existing Insurance Act had hampered the efficiency of pharmaceutical service to the medical profession. A country which could spend from six to eight millions a day on a war ought to be able to find ten or twenty million pounds for outlay on the health of the people when the necessity was shown.

Miss GERTRUDE COWLIN said that the College of Nursing was in accord with the work of the Federation, and the College would always be ready and willing to support any scheme that made for efficiency, freedom, and service.

Dr. WILLIAM HODGSON (Crewe), who said he was a vice-chairman of a county council and chairman of its education committee, spoke of the lack of coördination between the panel practitioner and the public services—public health work in connexion with tuberculosis, for example, being considerably hampered because there was no connecting link between the panel practitioner and the public health authorities. He would like to see a Royal Commission, or some committee of inquiry which could take evidence, and inquire into the whole working of the Act.

Dr. G. B. BATTEN disliked the idea of a whole-time State Medical Service. He agreed with Dr. Dill that panel practice tended to destroy the relations which had hitherto existed between doctor and patient, but he did not consider that panel practice had degraded a large number of the profession. In some of our industrial towns the conditions that existed before the Insurance Act were very much worse than those prevailing at the present time. The conditions of panel practice were better than those of club practice. The Insurance Act, however, aimed at a very low level, and to illustrate the importance of local autonomy advocated by Dr. Stancomb he instanced the arrangements of the Government with King's College Hospital during the war. The hospital received so much per bed per year, and had full control of the money, with a consequence that the patients had all that they needed for treatment immediately. At the military hospital next door anything that the surgeon required for his patient might be obtained in (say) four months' time.

The Necessity for a Change to a Better System.

Sir BERTRAND DAWSON, chairman of the Medical Consultative Council of the Ministry of Health, but speaking unofficially, said that unfortunately the controversy over the question of the regulations tended to divert the attention of the medical profession from the bigger to the smaller things. As far as the Ministry of Health was concerned, it was only fair to say that it inherited the organisation of the previous state of things. It was important that the Consultative Council should keep its mind fixed on the big things that Dr. Stancomb had referred to. If it be admitted that the organisation of the profession was inadequate to present needs, and that the Insurance Act had grave defects, was it better to sponge the slate quickly? Or slowly, and as opportunity offered, to remove the defects? Some system of insurance was necessary, and we had to change the present system into a perfect and ideal system. From the Prime Minister downwards he thought there was a very general desire to meet the profession in a broad-minded and sympathetic spirit. The Consultative Council had been well chosen from representative members of knowledge and experience, and he thought the profession would be well advised to take advantage of that body, using it as a model, and asking that similar organisations be extended to various parts of the country. He pointed out that the primary duty of the Council was to advise the Minister, but up to the present time the Minister had only been advised by permanent officials. The Medical Consultative Councils represented an endeavour to bring the Minister into relation with the medical profession outside, and while any committee advising the Minister did so confidentially, it was recognised that to make the proceedings entirely confidential would take away from the value of the advice. It had been agreed, therefore, that from time to time authorised statements from the Council should be made which would be, he hoped, published in the medical press. Those reports would not be unduly delayed.

Colonel F. E. FREMANTLE, F.R.C.S., the coalition candidate for Mid-Hertfordshire, referring to Dr. Stancomb's suggested analogy between the health organisation of the country and the educational authority, said it was a useful one for securing in the public mind the idea of a health service to retain voluntary and part service, and at the same time get State grants, but a health service on parallel lines with the education service would not be accepted by the medical profession. Whatever authority governed, it must be by popular election, although members might be co-opted on the analogy of the educational authorities. Where public money was dealt with there must be public control.

Dr. STANCOMB moved the following resolution, which was seconded by Dr. HODGSON.

> That in the opinion of this conference of medical and allied organisations the draft Regulations for 1920 proposed to be made by the Minister of Health with respect to the administration of the National Health Insurance Medical Benefit are not adapted to secure the most efficient service from the medical profession nor adequate results to the community.

Dr. CARGILL said that the present Insurance Act was a great advance on anything we had had before, and, further, it was elastic and could be added to. He thought the meeting would take a sane view if they built on the Insurance Act instead of wiping the slate clean.

Sir BERTRAND DAWSON emphasised the necessity of the profession being united in its views, and again called attention to the Consultative Council, which was a new chapter in Government. The Council had a right of access to the Minister and this had never been granted before.

Dr. CHARLES BUTTAR said the time had come when it was necessary for a commission to inquire not only into the working of the Insurance Act, but into all alternative systems to the 'panel system. Before any extension of the Act was made it was the duty of the Government to inquire into the effect of the existing system.

Dr. ARTHUR LATHAM said that everybody in the medical profession and in the political world was anxious that the health of the nation should be improved. They all realised that this could only be done when medicine was brought closely into touch with the individual. Nothing in the new regulations suggested that anything had been learned during the war, and medicine was not allowed to give to the community what it could give. The changes in the regulations were a political move to make the road easier for subsequent movements, and the present time was the right one to do whatever could be done to see that the community was better looked after.

Dr. STANCOMB'S resolution was put from the chair and carried.

On the motion of Dr. BUTTAR, seconded by Dr. HODGSON, it was agreed that a committee of inquiry be asked for to take evidence and report.

On the motion of Dr. LATHAM, seconded by Dr. COKE, it was decided that the resolutions of the Conference be conveyed to the Prime Minister, and that he be requested to receive a deputation, the Executive Committee being left to select a strong deputation from the various constituent bodies of the Federation.

The meeting closed with a vote of thanks to Sir Malcolm Morris for presiding.

TUBERCULOSIS.

Sanatorium Benefit in London.

Dr. Noel Bardswell's memorandum, dated Nov. 24th, to the London Insurance Committee, analysing the after-histories of patients recommended for sanatorium benefit during the year 1914 deserves to be widely read and studied. The sufferer from tuberculosis has long been charged with an unreasoning cheerfulness, although the spes phthisica pales before the optimism of the doctor concerned with his treatment. Useful, or indeed essential, to aid the recovery of the individual patient, this habit of mind does not conduce to an impartial survey of the results of therapeutic measures. Dr. Bardswell is never optimistic, and he is here analysing verifiable statements and not mere opinions. 2588 of the 3224 patients recommended for sanatorium benefit during 1914 have been traced up to the end of the year 1918 and their length of life ascertained. 70 per cent. of the total were dead within some four years from the date of recommendation. Of those who received institutional treatment 60·5 per cent. were dead. Classifying the patients into three groups according to the clinical severity of the disease: Of 552 early cases, 70 per cent. were known to be alive at the end of the period; of 1417 more advanced cases, 25 per cent.; and of 619 far advanced cases, only 3 per cent. Satisfactory results were largely limited to the patients in whose sputum no tubercle bacilli were found; of those with positive sputum, 72 per cent. were dead at the end of 1918, of those with negative sputum, 39 per cent. On these results Dr. Bardswell passes two careful but searching remarks:—

"The records show that, so far as the majority of the cases is concerned, the treatment given to the patients failed in its chief object—namely, to cure or sensibly to prolong life."

"The circumstances of most of the London patients were incompatible with the efficient treatment of tuberculosis."

Sanatorium benefit has certainly failed in London to fulfil its promise, but this fact does not condemn the whole dogma of the hygienic-dietetic treatment of phthisis. Put rudely, we know what to do, and we don't do it. The several aspects of curative treatment are, in Dr. Bardswell's phrase, inter-dependent and complementary. It is quite well known that the great part of treatment must be carried out in the home, and that the lack of after-care can invalidate institutional treatment. It is equally well known that the convalescing consumptive cannot compete in the labour market with the healthy man. But we have provided neither efficient relief nor any concerted plan of part-time employment. Within a few foolscap pages Dr. Bardswell sets out how these things are to be made good, and incidentally calls attention to the excellent scheme, suggested by Dr. F. S. Tinker to the Wimbledon War Pensions Committee, for the establishment of a special workshop for tuberculous ex-soldiers.

Report of the Tuberculosis Officer for Kent.

In his sixth annual report (1918) Dr. A. Greenwood finds that the notification of tuberculosis is still incomplete and unsatisfactory. In 33 urban and 19 rural districts the notifications of pulmonary tuberculosis failed to number more than twice the average number of deaths from this disease—a ratio suggested as a reasonable standard to be attained with respect to the efficiency of notification. This standard was reached only by eight urban and four rural districts. The average annual number of deaths from pulmonary tuberculosis in the 41 urban districts of Kent for the five-year period ending on Dec. 31st, 1918, was 728, and the total number of notifications in these districts during 1918 was 965. The corresponding figures for the 23 rural districts were 298 and 406 respectively. A curious fact brought out in the table, showing the results of sputum examinations, is the uniformity in the proportion of positive sputums in the different years. The figures for 1912, 1913, 1914, and 1918 are 26, 25, 25, and 25 per cent. respectively. The four districts into which the county is divided are reported on by the tuberculosis officer responsible for each district. These sub-reports contain many useful hints as well as information. In Section 2 of the report an account is given of institutional treatment and its effects.

Derbyshire County Council Report.

The report of the county medical officer, Dr. S. Barwise, includes the outline of a scheme for the prevention and treatment of tuberculosis. He finds the provision of an institution for the treatment of disease of the bones and joints and a residential open-air school the most important steps to be taken in the campaign against tuberculosis. Having found that as many as 70 per cent. of the patients notified died within 12 weeks of notification, he has addressed a circular to all medical practitioners in the county, pointing out the facilities provided by the tuberculosis staff for consultative assistance free of charge. A valuable feature of this report is an analysis by Dr. W. C. Fowler of the condition of the 1125 patients passing through the county's sanatorium during the four-year period 1915–18. As many as 94 per cent. of all the patients were traced. Only one-quarter of the sputum-positive cases were fit for work, whereas three-quarters of the sputum-negative or closed cases were fit for work at the end of the four years. Of the 1915 cases 58·4 per cent. were still living. Roughly speaking, half of all the patients completing treatment were at work, and slightly under one-third were dead.

Sanatoriums for Printers.

The members of the National Society of Operative Printers and Assistants have decided to perpetuate the memory of their comrades who fell in the war by endeavouring to save the lives of other members stricken with tuberculosis. To effect this object the society proposes to erect sanatoriums. Its members are raising £20,000 for this purpose, and Temple Hall Farm, Wellsborough, near Market Bosworth, Leicestershire, has been bought. A sanatorium will be erected on this site. The convalescent buildings are being separately paid for by the members of the society apart from the £20,000. Lord Northcliffe is the president of the committee set up to carry out the scheme, which has the support of the Newspaper Conference. Mr. Bowerman, M.P. (President of the Printing and Kindred Trades Federation), and Major George L. Berry (President of the International Printing, Pressmen, and Assistants' Union of North America) are the vice-presidents. The patrons already announced include Lord Burnham, Lord Rothermere, Sir Edward Hulton, Sir George Riddell, Colonel Sir Campbell Stuart, and Sir Samuel Waring. Subscriptions are appealed for. Cheques should be made payable to Mr. George Isaacs, Natsopa Memorial Home Account, 26, Blackfriars-road, London, S.E. 1.

Tuberculosis Training Colony for Chester.

Chester County Council have approved a scheme for acquiring, at a cost of £18,000, the Wrenbury Hall estate, consisting of the hall and 164 acres, to be used as a training colony for tuberculous patients. The British Red Cross Society have promised to contribute £20,000 towards the cost on certain conditions, one being that soldiers and sailors who served in the war shall, when possible, have preference.

Sir William R. Smith has been appointed recently an Officier de Légion d'Honneur, a Commander of the Order of Leopold II. of Belgium, and a Knight Commander of George I. of Greece

MEDICINE AND THE LAW.

Newington v. *Holman and Wife.*

AN action recently brought by a partnership of medical men, Messrs. C. W. H. Newington and T. Newington, against a patient who had been placed under their care in a nursing home maintained by them for persons suffering from mental disorders, ended in judgment for the plaintiffs. The action was brought to recover money due for medical attendance and advice, nursing, board, and residence, and other services, and the defence was based on facts of an unusual character. The defendant was placed under the plaintiffs' care with the full concurrence of his wife and near relatives, the former being appointed on June 26th, 1917, receiver of her husband's estate, his brothers joining in the request for her appointment. On June 8th the defendant had been admitted to Ticehurst House, the plaintiffs' establishment, after being confined at a private asylum, "Moorcroft." From "Moorcroft" there accompanied him the certificates and other documents under which he had been taken charge of at "Moorcroft" as a person of unsound mind suffering from general paralysis of the insane. The case for the defendant was that it was a statutory duty of the plaintiffs under Rule 9 of the Commissioners of Lunacy, dated June 26th, 1895, to have made an independent examination of the defendant on the day of his arrival, and under Sub-rule B of Rule 12 to have made a full entry and report of his condition in the case-book of the institution within seven days. An examination was, in fact, made by a medical officer on the staff of the institution on June 10th, and the defendant alleged that this showed no symptom to justify a diagnosis of general paralysis of the insane. The defendant further alleged that the symptoms found were due to derangement of the heart, which would account for the symptoms set out in the papers from "Moorcroft" as justifying a diagnosis of general paralysis of the insane. The defence was therefore that in the circumstances alleged there had been such non-performance of the plaintiffs' contract that they were not entitled to any payment in connexion with it. There was no complaint as to the treatment of the defendant when under the plaintiffs' care, Mr. Hastings, K.C., the plaintiffs' counsel, summarising the defence as a claim that the plaintiffs, in spite of the documents received from "Moorcroft," ought to have recognised at once that the defendant was not a lunatic. After medical evidence had been called on both sides and the defendant himself had given evidence, including evidence that he had at no time suffered from general paralysis of the insane, Mr. Justice Sankey gave judgment, saying that he was satisfied that the defendant was now of sound mind, and that he had led a perfectly exemplary life and had not suffered from syphilis at any time. No witness, however, had gone so far as to say that the plaintiffs on receiving the defendant into their house ought to have discharged him immediately, and in his lordship's opinion it would have been a gross breach of duty on their part if they had done so. This being the case, he held that the plaintiffs were entitled to succeed, and he gave judgment in their favour accordingly for £223.

The Costs of a Successful Litigant.

In the case of Ritter v. Godfrey, noted in THE LANCET of June 14th last, a medical man was the defendant in an action for damages for alleged negligence and want of care in attending a patient in childbirth. The defendant won the action, but Mr. Justice McCardie, in giving judgment in his favour, deprived him of his costs on the ground of certain letters written by the defendant to the plaintiff. The defendant appealed, and, appearing in person, obtained a judgment from the Court of Appeal by which he will receive the costs which in the ordinary course are paid to the successful party in litigation. Lord Justice Atkin, who delivered the principal judgment, held that the discretion to disallow costs was not absolute, but must be exercised in accordance with certain principles as to which he examined the authorities. In his lordship's opinion the judge must give the costs to a successful defendant unless he had either brought about the litigation or had done something connected with the institution or conduct of the suit calculated to cause unnecessary litigation or expense or had done some wrongful act in the course of the transaction of which the plaintiff complained. Applying these principles, more especially the first, his lordship pointed out that a very serious charge had been made against the defendant as an obstetrician—namely, that by negligence he had caused a child of a patient to be stillborn, and that this charge was formulated by the plaintiff (the husband of the patient) in his first letter. It was met by the defendant in one of the letters to which exception had been taken, which included detailed explanations of what had occurred, and these explanations were found afterwards by Mr. Justice McCardie to be accurate in fact and to negative the negligence complained of. It followed from this that there was nothing in the statements of fact in this letter which led the plaintiff reasonably to believe that he had a good cause of action, and so brought about the litigation. Mr. Justice Eve said that Mr. Ritter brought against Dr. Godfrey a most serious accusation, and that accusation having been proved to be unfounded it would be a negation of justice to hold that Dr. Godfrey was disentitled to his costs because he retaliated with some warmth, especially as the doctor in no way shirked reply to the accusations; his letters contained a detailed reply and an emphatic repudiation of liability and negligence, and were, in his view, an honest attempt to convince the plaintiff that there was no foundation for his aspersions. The apprehension of that by the plaintiff ought to have prevented the bringing of the action. Mr. Justice Eve did not feel called upon to express any opinion as to the phraseology in letters written in difficulties by a man smarting under unjust accusations. The Master of the Rolls accepted the views of Lord Justice Atkins and Mr. Justice Eve, and we congratulate Dr. Godfrey upon the issue.

CONTROL OF VENEREAL DISEASES.

The Society for the Prevention of Venereal Disease.

AT a meeting held at the Central Hall, Westminster, on Wednesday last under the auspices of the Faculty of Insurance, Sir Arbuthnot Lane in an opening address set out the aims of the Society for the Prevention of Venereal Disease. The consensus of intelligent opinion, he said, of those who had had unlimited experience, in the Navy, Army, and civil life, was that it was possible to avoid venereal disease by applying in a proper manner suitable germicides after exposure to contagion. Subsequent speakers contended that this claim was as well founded as anything in medical experience. The speakers were subjected to a close cross-examination by members of the audience in regard to the society's attitude to inquirers, and especially as to whether the actual details of disinfection should be issued to the novice with the imprimatur of men of high moral and scientific standing, without any indication that there were other considerations to be borne in mind. No resolutions were submitted to the meeting.

Privacy of Treatment at Clinics.

Some attention has been given to the question of "following up" patients who have ceased to attend at a venereal clinic. There is one factor especially which may cause patients to relinquish attendance, and that is absence of privacy. It should be regarded as an absolute necessity for interrogation and examination of patients to take place under conditions which secure privacy. It is neither seemly nor politic that questions of a pertinent nature should be put to the patient within the hearing of others. For the same reasons examination should be so conducted as to preclude any personal exposure in public. We realise how an insufficiency of staff may conduce to the infringing of proper conditions. To many patients publicity is in no sense a deterrent, but little imagination is

required to realise its effect on others of more delicate temperament.

Legislation against Venereal Disease in Sweden.

We are indebted to the National Council for Combating Venereal Diseases for the following abstract of legislative reforms in Sweden, where, since the outbreak of the war, two far-reaching measures dealing with venereal disease have been placed on the Statute Books. A review of the principles and aims of these legislative measures appeared in THE LANCET for Sept. 27th this year, and the following notes may be regarded as supplementing various details concerning the laws of 1915 and 1918.

The Marriage Act of 1915 forbids patients suffering from venereal disease in an infectious stage to marry unless the Crown's permission has been obtained. In connexion with the publication of the banns of marriage, the prospective bridegroom must give a declaration in writing that he is not suffering from venereal disease in an infectious stage; but with the Crown's consent he may marry in spite of suffering from venereal disease. Again, annulment of the marriage may be secured if one of the contracting parties suffered, without the other's knowledge, at the time of marriage, from epilepsy, venereal disease in an infectious stage, leprosy, or incurable impotency. But annulment cannot be claimed on these grounds if the applicant has not been infected with venereal disease, if this disease is no longer in an infectious stage, or if any other disease from which the other party suffered has meanwhile been cured. If one party to marriage suffers from venereal disease in an infectious stage and, knowing or suspecting this fact, exposes the other party to infection by sexual intercourse, the other party is entitled to a separation provided he has not, with full knowledge of the risks, exposed himself to infection. Separation cannot be granted unless an application is made within six months of the date when the applicant learned of the exposure to infection, and unless the applicant was actually infected, and the disease in the offender was in an infectious stage at the time of application. If annulment of the marriage is secured by one party proving that the other had been guilty of deceit in regard to the marriage, the penalty for the offender is imprisonment for at least one year, or penal servitude for not more than four years. A person who knowingly gives false information as to freedom from obstacles to matrimony shall be liable to imprisonment or, if he has voluntarily withdrawn his testimony before the marriage, to a fine.

The Swedish Act of 1918.

The legislation of 1918 deals very thoroughly with the subject of venereal disease. A person who suffers from venereal disease in an infectious stage and who, knowing or suspecting this fact, exposes another person to infection by sexual intercourse or indecent conduct apart from sexual intercourse, is liable to imprisonment or, under extenuating circumstances, to a fine. If infection actually follows, the penalty is increased to penal servitude, not exceeding two years.

Any person who, in another way than the above, intentionally or by gross carelessness exposes another to infection, is liable to imprisonment or a fine. If infection occurs the penalty is increased to penal servitude for a maximum of two years.

The following paragraphs in the Act concern venereal disease:—

3. Everyone who contracts venereal disease must submit to the requisite treatment and measures designed to prevent further spread of the disease.

4. Anyone apprehending infection with venereal disease is entitled to a free medical examination, treatment in or outside a hospital according to the needs of the case, and to the necessary drugs, utensils, and certificates free of charge.

6. The State must bear the cost of serological, bacteriological, and other examinations, as well as of drugs and utensils.

8. If a medical practitioner observes venereal disease in a patient whom he examines or treats, the practitioner must acquaint the patient with the character and infectiousness of the disease, and must give instructions as to its treatment and the prevention of infection of others. The patient must be informed of the regulations dealing with venereal disease as an obstacle to marriage, and of the penalties attaching to acts calculated to promote the spread of the disease. The practitioner is, however, exonerated from this duty when he finds that the patient's health or other circumstances render it imperative that the character of the disease should be concealed. In the case of a patient under the age of 15, the guardian and not the patient should be informed of the nature of the disease and of the precautions to be taken.

9. If a practitioner has diagnosed venereal disease in the circumstances just referred to, and finds that the patient does not obey instructions, or has discontinued treatment without giving proof that another practitioner has undertaken to treat him, then the practitioner must notify this fact in writing to the proper authority.

10. If a practitioner has diagnosed venereal disease he must instantly report the matter in writing to the proper authority if it comes to his knowledge that the patient, while the disease is still infectious, intends to marry without the Crown's consent.

11. If a practitioner has diagnosed a case of venereal disease not already diagnosed by another practitioner he must inquire of the patient of whom and under what circumstances the disease has been contracted. The practitioner must, not later than the following day, notify the authorities of the nature of the disease, and the sex, age, and address of the patient, but not the patient's name. Information must also be given as to the circumstances under which infection occurred, and the name and address of the person accused of conveying the infection must also be notified.

14. A source of infection having been notified under sufficiently trustworthy circumstances, the authority notified shall inquire of the accused about the circumstances in which the disease was contracted. The accused shall also submit to a medical examination.

15. If the examination referred to in 14 shows the accused to be suffering from venereal disease, the authorities shall give instructions as to early treatment. If the patient cannot be treated outside a hospital without considerable risk of further spread of the disease, steps must be taken to secure the patient's early admission to hospital.

16 defines the powers of the authorities when a patient proves refractory in regard to the treatment found most suitable.

17. Should the medical authority receive a notification from a medical practitioner to the effect that a patient intends to marry without the Crown's consent, while the disease is still infectious, the medical authority must at once transmit this notification to the clergyman of the parish in the church books of which the patient's name is entered. If the marriage certificate has been, or is about to be, made out, the clergyman must at once forward the notification to the authority concerned with obstacles to marriage.

19. The injunctions concerning 14, 15, and 16 must be given in writing, and must include a reminder of the consequences entailed by their neglect.

20 to 24 inclusive deal with special circumstances, such as police assistance in refractory cases, venereal disease in the army and in prisons, overlapping of jurisdictions, &c.

25. No official concerned with the administration of this law must communicate to others information acquired in the pursuit of his duties. Documents dealing with these matters must be kept private and in a safe place. But in the course of certain legal proceedings, the court and prosecutor may demand information as to the result of a medical examination.

28 defines the penalties attaching to breaches of this law and the fines incurred by medical officials convicted of failing to comply with its enactments.

It is evident from this summary that the net for catching sources of infection early has been drawn very tight, and that, in pursuit of this object, the liberty of action of the medical profession has been seriously curtailed. It remains to be seen whether the bulk of the medical practitioners in Sweden accept their new duties as necessary and inevitable, or evade them as contravening the moral obligations existing between a patient and his medical confidant and adviser.

BRIGHTON HOSPITAL SUNDAY.—The Hospital Sunday collections in the places of worship in Brighton, Hove, and Preston still show an increase each year. The total collected this year comes to £1537 0*s.* 8*d.*, of which £1516 have been distributed as follows: Royal Sussex County Hospital, £720; Brighton, Hove, and Preston Dispensary, £180; Royal Alexandra Hospital for Children, £150; the Queen's Nurses, £130; Women's Hospital (West street), £120; Throat and Ear and Eye Hospitals, each £52 10*s.*; Provident Dispensary, £30; Royal Surgical Aid Society, £28 10*s.*; Sussex County Homœopathic Dispensary, Dental Hospital, and the Lady Chichester Hospital for Women, each £15 and the New Sussex Hospital (Ditchling-road), £7 10*s.*

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The Irish Public Health Council.

ALTHOUGH the constitution of the Irish Public Health Council has undergone a good deal of criticism in the columns of THE LANCET and elsewhere, it appears to have accomplished a fair amount of work, all of it in accordance with the declared demands of the profession. It is true that much remains to be done, but the council has decided on two important points, that whole-time medical officers of health should be appointed for every county area in Ireland, and that the administrative area for all health services should be the county. In the past the Poor-law union area has been the unit, and only a few matters concerning health were dealt with on a county basis. It is understood that the council has given consideration to the problem of the central machinery for health administration, but has not yet decided on any particular solution and similarly the question of the scope of the classes to which it is intended to give medical attendance has been discussed, and has been held over until a conference with representatives of the medical profession. It is clear that if the council is to frame an adequate scheme for the health administration of the country the several parts of the machine must be made to fit in with each other. The council is probably acting wisely in travelling by way of discussion over the whole ground before deciding finally on detailed points.

Dublin Hospitals.

The finances of the Dublin hospitals remain in a precarious condition. The voluntary system of maintenance is inadequate, and there is no likelihood that it will ever again provide security. The round of special appeals, fêtes, and flag days is wearisome and ineffective, and if the hospitals are to be maintained to perform their double duty of relieving the sick and providing material for medical study, some radical plan must be adopted. If the Irish Public Health Council is to frame an adequate scheme of medical treatment for the country, this must secure for the classes to be treated an efficient hospital system. It is not likely that either the State or the local authorities will wish to take over the responsibility of the voluntary hospitals, but either one or the other, or the two combined, may be quite willing to pay for the treatment of a large class of the community. Such a selection might include most of those unable to pay for hospital treatment, and a suitable capitation payment per day would then leave the hospitals in a position of fair financial security. But even if the council should frame a perfect scheme there is no certainty that the Government will carry it into execution. There has been much talk in hospital circles in Dublin this autumn of the possibility of amalgamating several of the smaller hospitals into one large institution. By such means the Dublin School of Medicine would gain enormously, and individual patients would be more efficiently treated than at present, with better results for the money spent. Moreover, such a bold undertaking would certainly appeal more strongly to the money-giving public, who are tired of the competing claims of a dozen small institutions. The difficulties in the way are, of course, considerable, and many interests must be reconciled before any progress can be made.

The Queen's University of Belfast.

At a meeting of the Senate of the Queen's University of Belfast, held on Dec. 10th, the Vice-Chancellor made an appeal—in view of the increased number of students—for further public money in order not only to provide for increased demands, but to make a claim for further Treasury endowments. He drew attention to the fact there were over 1000 students in attendance, and that Liverpool University, which is similarly circumstanced, had called upon the people of Liverpool for a sum of not less than £500,000; he mentioned further how 18 years ago the people of Belfast had provided a "Better Equipment Fund" of £100,000, which had at that time proved most useful. He instanced as pressing needs the provision of a hostel for men students (through the kindness of two Belfast ladies a hostel had been provided for female students), buildings for chemistry, anatomy, and zoology. The best claim on the people of Belfast and Ulster can be made on the medical side of the University, as the medical students (this year 590 out of a total in all faculties of 1024) attending the University so outnumber all others, and the medical school affords "the bread-and-butter" training for those who come to the University as a means of earning a livelihood. It is to be hoped that, if the public respond to this appeal, great changes will be made in the final subjects of the medical curriculum, so as to bring these departments up to modern scientific requirements, and to link up the University with the clinical hospitals.

Dec. 16th.

The Services.

THE HONOURS LIST.

THE following awards to medical officers for valuable services rendered in the several spheres of military operations are announced:—

C.B.—Lt.-Col. and Bt. Col. (temp. Col.) W. H. S. Nickerson, V.C., C.M.G., R.A.M.C.; Col. O. L. Robinson, C.M.G., K.H.P., late R.A.M.C.; Col. H. A. Hinge, C.M.G., D.S.O., late R.A.M.C.; Col. H. J. M. Buist, C.M.G., D.S.O., late R.A.M.C.

C.M.G.—Lt.-Col. (acting Col.) C. Garner, C.B.E., ret. pay, late R.A.M.C.; Lt.-Col. P. S. Lelean, C.B., R.A.M.C.; Col. D. J. Collins, late R.A.M.C.

C.B.E.—Temp. Lt. Col. C. S. Myers, R.A.M.C.; Lt.-Col. R. H. Walton, N.Z.M.C.; Dr. (Mrs.) A. M. Livingstone-Learmonth, R.A.M.C.; Temp. Lt.-Col. J. V. Blachford, R.A.M.C.; Lt.-Col. M. O'D. Braddell, R.A.M.C.; Lt.-Col. H. G. Cook, R.A.M.C.; Temp. Maj. H. D. Gillies, R.A.M.C.; Temp. Lt.-Col. E. Goodall, R.A.M.C.; Temp. Lt.-Col. W. Harding, R.A.M.C.; Maj. J. W. B. Hodsdon, R.A.M.C. (T.F.); Temp. Lt.-Col. J. Keay, R.A.M.C.; Temp. Lt.-Col. H. A. Kidd, R.A.M.C.; Maj. A. W. Ormond, R.A.M.C. (T.F.); Surg. Lt.-Col. and Bt. Col. E. N. Sheldrake, ret. pay; Temp. Lt.-Col. A. Simpson, R.A.M.C.; Maj. (temp. Lt.-Col.) A. B. Smallman, D.S.O., R.A.M.C.; Lt.-Col. and Bt. Col. S. J. Thomson, C.I.E., I.M.S.; Temp. Lt.-Col. W. J. N. Vincent, R.A.M.C.; Lt.-Col. and Bt. Col. H. J. Waring, R.A.M.C. (T.F.); Maj. and Bt. Lt.-Col. A. Wright, ret. pay, R.A.M.C.; Lt.-Col. (temp. Col.) S. R. Burston, D.S.O., Aust. A.M.C.; Lt.-Col. H. S. Newland, D.S.O., Aust. A.M.C.; Col. B. J. Newmarch, C.M.G., Aust. A.M.C.; Lt.-Col. (temp. Col.) J. M. Y. Stewart, D.S.O., Aust. A.M.C.; Lt.-Col. G. Home, O.B.E., N.Z.M.C.; Maj. T. McKebbon, O.B.E., N.Z.M.C.; Col. R. Tracy-Inglis, N.Z.M.C.; Temp. Lt.-Col. A. B. Ward, D.S.O., S. Afr. M.C.

Distinguished Service Order.

Lt.-Col. M. W. Cave, Austr. A.M.C.; Temp. Capt. J. E. Finlay, R.A.M.C.; Temp. Capt. H. E. Heapy, R.A.M.C.; Capt. G. M. Hetherington, R.A.M.C. (S.R.)

The Military Cross.

Capt. T. P. Inglis, R.A.M.C. (S.R.); Capt. J. G. Gow, N.Z.M.C.

The following are the official "statements of services" for the honours recorded in THE LANCET of April 12th last, p. 632. All the recipients are of the R.A.M.C., except where otherwise stated:—

Distinguished Service Order.

Capt. (acting Major) William Barnsley Allen, V.C., M.C., attd. 13rd (W. Rid.) Fd. Amb. (T.F.).

For conspicuous gallantry and devotion to duty during the fighting west of Saulzoir for the Selle River line between Oct. 11th and 14th, 1918. He showed a very high degree of fearless initiative in organising the collection of wounded from ground under continuous hostile shell fire, and by his inspiring example, untiring energy, and contempt of danger he was able to move large numbers of helpless wounded from positions of danger before he was himself gassed.

Major Archibald Craig Amy, attd. 21st (High.) Fd. Amb. (T.F.).

For conspicuous gallantry and devotion to duty on Oct. 24th, 1918, at Douchy, when in charge of the advanced dressing station there. The town was shelled with H.V. guns for four hours, many shells bursting in the vicinity of the advanced dressing station, one shell causing 21 casualties. A large number of wounded were brought in, and by his coolness and energy he prevented any confusion resulting, and cleared his advanced dressing station successfully.

Major John Freeman Blair, Can. Army Dental Corps, attd. 4th Fd. Amb., Can. A.M.C.

For conspicuous gallantry and devotion to duty from Nov. 5th–11th, 1918, in the Valenciennes-Mons area, as liaison officer between R.A.P.'s and forward collecting posts. Keeping in close touch with the rapidly advancing infantry, he was continuously under fire, but ensured the rapid evacuation of the wounded. On several occasions he dressed the wounded in the open under fire, remaining to superintend their removal on the arrival of the stretcher-bearers.

Temp. Capt. (acting Major) Ronald Campbell Cooke, M.C., 134 Fd. Amb.

He was always equal to the occasion when, owing to considerable advances made by our troops, fresh organisation and alteration of schemes of evacuation were demanded to meet the conditions, and his unit was short-handed. His skill and fine devotion to duty over a difficult period were admirable.

Major Burnet Elmer Kelly, 9th Fd. Amb., Can. A.M.C.

For conspicuous gallantry and devotion to duty from Oct. 22nd to Oct. 30th, 1918, between Raismes and Bruay. In charge of the evacuation of wounded of the 9th Canadian Infantry Brigade, he personally went over the field, night and day, with his stretcher-bearers, collecting wounded, most of the time under machine-gun and shell fire. His energy was an outstanding example to all ranks.

Temp. Capt. John Hay Moir, M.C., attd. 17th Bn. R. Fus.

For conspicuous gallantry and devotion to duty on Sept. 27th, 28th, and 29th, 1918, near Noyelles. On the 27th, while a stretcher-party moving to the rear received a direct hit, he rushed out to its assistance and attended to the survivors under intense shell fire, carrying them to a place of safety. On the 28th he worked his aid-post under concentrated fire, dressing the wounded in the open after the cellar was full. He was very badly shaken by a shell burst, but carried on his work into the night and assisted to pick up wounded in a counter-attack. Although utterly exhausted on the 29th, he continued attending the wounded with energy and determination.

Major George Willard Treleaven, M.C., 4th Fd. Amb., Can. A.M.C.

For conspicuous gallantry and devotion to duty from Nov. 5th to 10th, 1918, in the Valenciennes-Monsana, in charge of the evacuation of casualties from the forward area of the division. For five days he was continually under fire in the open, selecting aid-posts, and superintending the evacuation of the wounded. He frequently led stretcher parties forward across open ground fully exposed to enemy fire, and his disregard of danger was a splendid example to all ranks.

Capt. Robert Bell Stewart, M.C., attd. 55th Fd. Amb.

For conspicuous gallantry near Preux aux Bois and Hecq on Nov. 4th, 1918. He was in charge of a division of stretcher-bearers when, finding the attack held up, he went forward alone to reconnoitre. He organised the evacuation of wounded under heavy fire, and pushed on into the Forest de Mormal to reconnoitre roads for the purpose of getting wounded back. Throughout that day, by his energy and devotion to duty, all casualties were expeditiously got away.

Bar to Military Cross.

Capt. (acting Major) Joseph Herbert Bayley, M.C., Spec. Res., attd. 76th Fd. Amb.

For conspicuous gallantry and devotion to duty near Landrecies on Nov. 3rd, 4th, and 5th, 1918. Throughout this period he worked without rest, personally visiting R.A.P.'s and relay posts under heavy fire. The fine example he set inspired all who worked under him, and his efforts ensured the rapid evacuation of all the casualties of the division.

Temp. Capt. Eric Biddle, M.C., 91st Fd. Amb.

During the recent operations in the neighbourhood of Happegarbe-Ors and the crossing of the Oise-Sambre Canal he was continuously in charge of the R.A.M.C. bearers. On Nov. 2nd, 3rd, and 4th, 1918, his brigade attacked each day with many casualties. Throughout this time he kept in touch with all the regimental medical officers of his brigade, visiting them frequently, though the roads were continuously under heavy shell and machine-gun fire, and by his energy and disregard of danger effected rapid evacuation.

Captain (acting Major) Thomas William Clarke, M.C., Spec. Res., attd. 148th Fd. Amb.

For conspicuous gallantry and devotion to duty at the Canal du Nord in front of Moeuvres on Sept. 27th, 1918, when in charge of the evacuation of wounded of an infantry brigade. He took the bearers across the canal immediately behind the infantry, the while exposed to heavy machine-gun fire from an exposed flank. He was successful in relaying the wounded from the R.A.P. to the canal bank, and so enabling the wounded to be cleared from the field rapidly.

Capt. (acting Major) Henry Norman Goode, M.C., 1 1st (W. Rid.) Fd. Amb. (T.F.).

From Oct. 29th, 1918, till the morning of Nov. 3rd, 1918, he was in command of the bearers clearing the divisional front. He was under enemy shell fire daily, and was buried by a shell on Oct. 30th. Throughout the whole time he worked day and night with short intervals for rest, setting a fine example of fearless devotion to duty.

Temp. Capt. (acting Major) Charles Hope Haddow, M.C., 77th Fd. Amb.

For conspicuous gallantry near Basuel on Oct. 23rd, 1918, when he repeatedly brought up his bearers to the R.A.P. in face of very heavy shell fire, and managed to get away the wounded lying there. It was entirely due to his untiring efforts that the wounded of the brigade were cleared from the battle front. His fine work enabled many lives to be saved.

Capt. (acting Major) Clark Nicholson, M.C., Spec. Res., attd. 49th Fd. Amb.

For conspicuous gallantry and devotion at Neuville and Ghissingnies on Oct. 24th, 1918. Early in the morning he made his way through the counter-barrage to reconnoitre and establish relay posts, and throughout the day he worked unceasingly under fire, superintending evacuation, and at night he personally took the ambulance cars along the shelled routes, dressing the wounded himself. It was due to his unremitting exertions, great courage, and fine example that the evacuation of the wounded was successfully carried out.

Temp. Lieut. Thomas Gordon Playford, M.C., attd. 1 1st (North'bn.) Fd. Amb. (T.F.).

On Nov. 7th, 1918, he was at St. Remy Chaussee in command of bearers. Hearing that there was a large number of wounded in an aid-post he took two ambulance cars to the place, making three journeys in all, under heavy machine-gun and shell fire, and eventually cleared some 30 wounded. On the following night he again took cars and cleared seven loads of patients. As the aid-posts were only three or four hundred yards from the front line he showed great courage and devotion to duty.

Temp. Capt. (acting Major) Arthur Richmond, M.C., 19th Fd. Amb.

For conspicuous gallantry and devotion to duty near St. Aubin during operations on Nov. 7th and 8th, 1918. Hearing that another medical officer had become a casualty and that nearly 70 other casualties had occurred in the battalion, he led a party of stretcher-bearers through heavy shell fire and direct machine-gun fire to succour and remove them to a place of safety. Through his indefatigable efforts all casualties were brought back.

Capt. (acting Major) Arthur Leonard Shearwood, M.C., Spec. Res., attd. 33rd Fd. Amb.

For conspicuous gallantry and initiative when in charge of the evacuation of the wounded during the operations carried out between Nov. 3rd to Nov. 11th, 1918. During this period he worked day and night, frequently under shell fire, and by his energy and devotion to duty saved many lives.

Capt. (acting Maj.) Hubert Shield, M.C., 1 1st (North'bn.) Fd. Amb. (T.F.).

On Nov. 4th, 1918, at Fontaine au Bois. He worked continuously, healing and clearing wounded from forward area under heavy shell and machine-gun fire. Subsequently, up to Nov. 10th, in charge of bearers, he set a fine example to the men under his command, and brought in many wounded.

Capt. George Alexander Smith, M.C. 13th Fd. Amb., Can. A.M.C.

For conspicuous gallantry and devotion to duty in the operations south of Valenciennes on Nov. 1st and 2nd, 1918. Through heavy gas-shell and machine-gun fire he supervised the clearing of the battlefield, and much of the success of the rapid evacuation of the wounded was directly due to him. He showed a total disregard of personal danger and splendid energy, and was a magnificent example to all men under him.

Capt. (acting Major) Robert Alexander Stark, M.C., 1 3rd (W. Rid.) Fd. Amb. (T.F.).

For conspicuous gallantry and devotion to duty during the fighting west of Saulzoir for the Selle River, north-east of Cambrai, between Oct. 11th and 14th, 1918. He was charged with clearing the wounded from ground newly won, and the object of a heavy counter attack by the enemy. As a result of his devotion and total disregard of personal risk, it was possible to clear numbers of helpless wounded from positions of great danger, and he was directly responsible for saving many lives. He set a magnificent example to all ranks with him.

Capt. Richard Chapman Weldon, M.C., Can. A.M.C., attd. 2nd Motor Bde., Can. M.G. Corps.

While in action at Naves, on Oct. 10th, 1918, he had command of the R.A.P. established just west of the village. When a motor-cycle scout had his legs blown off and was wounded in the chest on the road east of Naves, he went forward under heavy fire, dressed his wounds, and had him taken back in his car, thus undoubtedly saving his life. He has consistently shown marked devotion to duty.

Temp. Capt. (acting Major) Ivan Stuart Wilson, M.C., 9th Fd. Amb.

For conspicuous gallantry and resource on Nov. 4th, 5th, 6th, and 7th, 1918, between Ruesnes and La Longueville. He helped to organise the evacuation of all wounded from the divisional front. Though frequently exposed to heavy shell fire, and at times under machine-gun fire, his perseverance and initiative contributed largely to the quick evacuation of all wounded.

(The continuation of the list will be given next week.)

ARMY MEDICAL SERVICE.

Col. A. H. Waring is placed on half pay.

Temp. Col. J. F. O'Carroll relinquishes his commission and retains the rank of Colonel.

ROYAL ARMY MEDICAL CORPS.

Lieut.-Col. and Bt. Col. L. W. Harrison and Major R. F. M. Fawcett retire on retired pay.

Lieut.-Col. and Bt. Col. E. E. Powell to be acting Colonel.

Major R. C. Hallowes relinquishes the temporary rank of Lieutenant-Colonel.

The undermentioned relinquish the acting rank of Lieutenant-Colonel: Majors E. J. Kavanagh, T. E. Harty;

Capts. G. S. Parkinson, G. D'R. Carr; Temp. Capts. G. Jackson, R. Jamison.

Major A. B. Hinde, retired pay, relinquishes the acting rank of Lieutenant-Colonel on ceasing to command a Medical Unit.

Major and Bt. Lieut.-Col. R. B. Ainsworth, and Majors T. H. Gibbon, J. L. Wood, and A. S. Littlejohns to be temporary Lieutenant-Colonels whilst specially employed.

The undermentioned relinquish the acting rank of Major: Capt. C. E. L. Harding; Temp. Capts. K. Black, R. E. Cree.

Capt. J. B. Minch, from Special Reserves, to be Captain.

Capts. J. J. Molyneaux and R. H. Alexander relinquish the acting rank of Major on ceasing to be specially employed.

Capt. J. Biggam is seconded for service with the Egyptian Army.

Capt. S. M. Hattersley to be temporary Major whilst specially employed.

Capt. L. R. Shore is placed on the Half-pay List on account of ill-health caused by wounds.

H. T. O'Neill to be temporary Captain.

D. P. Fitzgerald and F. T. Allen to be temporary Lieutenants.

Officers relinquishing their commissions: Temp. Major H. Robinson (retains the rank of Major); Temp. Hon. Capts. W. R. Thomas, N. M. Keith; Temp. Hon. Lieut. T. S. Evans (retains the honorary rank of Lieutenant).

SPECIAL RESERVE OF OFFICERS.

Capt. D. Henegan relinquishes his commission and retains the rank of Captain.

Capt. V. Wiley relinquishes the acting rank of Major.

TERRITORIAL FORCE.

Capts. (acting Majors) L. Rawes and R. R. Powell relinquish the acting rank of Major on ceasing to be specially employed.

3rd Southern General Hospital: Major E. Mallam and Capt. G. R. Girdlestone are restored to the establishment.

1st Northern General Hospital: Capt. (acting Major) N. Hodgson relinquishes the acting rank of Major on ceasing to be specially employed, and remains seconded.

2nd Scottish General Hospital: Capt. (acting Major) R. A. Fleming relinquishes the acting rank of Major on ceasing to be specially employed.

1st London Sanitary Company: Lieut. G. Whittaker to be Captain.

Sanitary Service: Major (Bt. Lieut.-Col.) H. Stott relinquishes his commission and retains his rank.

TERRITORIAL FORCE RESERVE.

Major Sir B. G. A. Moynihan, from 2nd Northern General Hospital, to be Major, and is granted the honorary rank of Major-General.

Capt. H. Burrows, from 5th Southern General Hospital, to be Colonel.

ROYAL AIR FORCE.

Medical Branch.—Flying Officer J. Prendergast to be Flight Lieutenant.

Wing-Comdr. R. H. Mornement (Surgeon-Commander, R.N.) and Flight-Lieut. J. D. Bangay (Surgeon-Lieutenant, R.N.) relinquish the temporary R.A.F. commission on return to naval duties.

Flying Officer H. J. Swan relinquishes his temporary R.A.F. commission on expiration of contract.

The undermentioned are transferred to the unemployed list: Capts. F. C. Morgan, C. L. McDonogh, J. P. Doyle, T. M. Davies.

Dental Branch.—Capt. C. Murray-Shirreff is transferred to the unemployed list.

INDIAN MEDICAL SERVICE.

Lieutenant-Colonels to be Colonels: F. R. Ozzard, (Bt. Col.) A. J. Macnab, (Temp. Col.) C. N. C. Wimberley.

GREAT NORTHERN HOSPITAL PROGRESS FUND.—This fund was inaugurated at a festival dinner held at the Connaught Rooms, London, on Dec. 12th. The Prince of Wales presided, and in proposing the success of the fund he recapitulated the history of the Great Northern Central Hospital from its small beginning in 1856 to the present time, when there are 2800 in-patient and 123,500 out-patient attendances in the year. The Progress Fund contemplates the addition of a block of four wards containing 100 beds, new departments for out-patients and accidents, additional wards for contributing patients, larger observation wards, extension of the X ray department, additional operating theatres, and a nurses' home. At the conclusion of the dinner the secretary, Mr. G. G. Panter, announced that the fund had benefited by more than £25,000.

Correspondence.

"Audi alteram partem."

THE ECONOMIC SITUATION IN VIENNA.

To the Editor of THE LANCET.

SIR,—On my return from England I found that conditions here are growing worse from day to day. I travelled from Holland in a Dutch Red Cross train of 19 trucks with food and clothes for Vienna and Budapest. On passing the Austrian frontier, which is now a few miles only from Vienna, I heard that there was no flour in the city for next week's bread. Relief from Germany at the last moment prevented a terrible catastrophe. Starvation is more visible than it ever was, and it is now the middle class which is in the most terrible need. I give two instances from my own practice.

A Dutch engineer with a good income came to me (I am now regarded as the holder of all English food-supplies!) to ask some condensed milk for his wife, ill for three months with rheumatic arthritis and endocarditis; after having paid kr.35 for half a litre of milk, he could get no more for love or money.

A high official of the governmental department for instruction came to ask me, himself in deplorable bodily condition, whether his son of 13 years could be sent to my own hospitable country of Holland with one of the children's trains now running nearly weekly. He had not food enough for this boy. His eldest son came home two months ago from Poland, where he was for years a prisoner of war. His only clothes were a shirt and an old uniform, and his father was unable to buy him any more clothes.

I feel extremely happy that the little provision sent by some English friends of mine as supplies for my clinic permits me to help on a small scale such poor people. If my colleagues in England could send supplies of condensed milk, Quaker oats, and good biscuits, addressed to the I. Medical Clinic, Lazarettgasse 14, Vienna, they might be sure that their presents will go into the right hands only, and specially to such patients as are not in the hospitals and cannot obtain public support.

Dr. Harriette Chick and Dr. Elsie Dalyell, of the Lister Institute, are doing excellent work here. A short paper by Dr. Chick on the prevention of scurvy is appearing in the local newspapers to tell a larger public what to do against this disease, which is very common among the population. A medical inspector tells me that all of 450 children whom he examined had swollen glands in the neck. Miss Chick will soon send you some papers on her work and her experiences among the children here.

What will happen to this city I do not know, the need being so acute at the first beginning of winter. I fear myself that the measures which are being planned on a large scale to restore the possibilities of life to this country will come too late. In any case the conditions, governmental and social, of German Austria as a whole must soon compel the Allied Governments to take Austrian matters into their own hands.

Last week two young doctors, unable to gain a living in Vienna, committed suicide. The assistants in my clinic (one of them a woman) regularly leave the town on Saturday and Sunday to cut wood in the Wienerwald, and bring it home on their backs. But the supplies are now nearly exhausted.

My visit to England, which proved a success in many respects, will be all my life one of my most interesting and most touching experiences. You cannot realise how your kind help is appreciated by the whole Viennese medical profession.

I am, Sir, yours faithfully,

Vienna, Dec. 1st, 1919. K. F. WENCKEBACH.

THE NEED FOR SCHOOLS OF PSYCHIATRY.

To the Editor of THE LANCET.

SIR,—The paper by Dr. C. H. Bond published in THE LANCET of Dec. 12th once more draws attention to a strange deficiency in the curriculum of our medical schools. This need for adequate practical training in

psychiatry was dealt with in a leading article in THE LANCET of April 6th, 1912, and in a letter of comment thereon by Dr. Bedford Pierce. With the actual needs of the alienist in this matter I am for the moment less concerned than with another aspect of the case for specialised training in psychological medicine, to which I drew attention in a letter published in THE LANCET of the same period (April 27th, 1912) from which I may be allowed to quote:—

"The statutory medical inspection of school children during the last four years has brought a large number of members of the medical profession into direct touch with the problem of the mentally deficient child and his psychology. The absence of any opportunities for definite preliminary training for this branch of the work stands in marked contrast to the ample facilities which exist for the acquisition of a knowledge of sanitary science and school hygiene, and the school medical officer is left to grope in the dark in that domain of knowledge 'where three empires meet'—i.e., those of the physician, the pedagogue, and the psychologist."

Since these words were written much has happened to intensify this need. The Mental Deficiency Act, 1913, the Elementary Education (Defective and Epileptic Children) Act, 1914, and the Education Act, 1918, have thrown still greater responsibilities upon school medical officers. It is now obligatory upon all local education authorities to seek out all those children and young persons who show presumptive evidence of mental defect and to make such provision for them as the circumstances warrant. Meanwhile, the war has made the public acquainted with all kinds of questions which were formerly looked upon as belonging strictly to the specialist—war neuroses, shell shock, conduct and mental instability, and the relation of these to the general mental make-up of the individual. At the same time it has become increasingly clear that intellectual capacity in children is not a matter upon which a judgment can be passed without considerable knowledge of mental processes or without continued and systematic observation. The recognition of this fact, and of the stigma which in the present stage of public opinion attaches to the fact of certification as mentally deficient, has led educationalists to look to the provision of "backward classes" as an avenue of discrimination between the "feebly-gifted" and the "feeble-minded."

But herein lies the need for observers with adequate training and experience. The work of Spearman and Burt, amongst others, has shown how abundant is the material available and how valuable the results of examination by psychological methods. It may, perhaps, be argued that for this purpose medical knowledge is not essential. There is an element of truth in this argument, but it is clear that there are so many causes of retardation of a physical or morbid character which may be involved in the problem that a combination of expert knowledge of both kinds is eminently desirable. Yet with a few notable exceptions we cannot claim that the medical profession has produced, or is producing, psychologists of this type, nor have we grounds of complaint if, having neglected to provide this specialised training, this branch of investigation becomes more and more attached to the pedagogic side of educational administration.

I am, Sir, yours faithfully,

Birmingham, Dec. 14th, 1919. GEORGE A. AUDEN.

THE "GRIDIRON" INCISION.

To the Editor of THE LANCET.

SIR,—Having performed appendectomy over 100 times (77 times in the Army, with only one death, and that a colonel's wife, 16 days after operation), and being especially interested in hernia, the paper on the above subject in your issue of Dec. 6th by Mr. St. George Griffiths at once attracted me. Although I have not come across a case of right inguinal hernia attributable to the injury caused by appendectomy, I have no doubt that Mr. Griffiths's explanation of the association is correct—that it is due either to avulsion or division of the nerves during the splitting of the internal oblique and transversalis, or to the inclusion of a nerve in a suture during that operation. Certainly, the nerves which supply the muscles ending in the conjoint tendon pass down in that part of the abdominal wall between the anterior superior iliac spine and the linea semilunaris. They course downwards in the deeper layers of the transversalis, or between it and its aponeurosis, and, especially in well-developed subjects (in whom this muscle is often surprisingly thick), may readily be injured by tearing or cutting during the gridiron operation. They cannot be so readily looked for as during other methods of getting through the abdominal wall. The splitting of the muscle has often or usually to be extended out to the iliac spine, and after this is done one must pierce the subjacent aponeurosis. This is usually incised, and often to get the necessary room the incision is carried into the rectal sheath. Thus, all the nerves which pass down in this lateral region of the belly wall are liable to injury.

There is another objection to the gridiron operation viz., that by it one does not always hit off the place where the appendix is most accessible. Sometimes the appendix is high up (near the gall-bladder), or low down (in the pelvis), and inaccessible by the gridiron operation performed in the usual position. In one case, after opening the abdomen in this way, I had to divide the linea semilunaris upwards to reach (and dig out) the inflamed part. I have therefore preferred to go through the inner muscle layer and its subjacent aponeurosis by dividing its muscle and fascial fibres by an incision lateral but quite close to the linea semilunaris. The incision made is small, and during the process nerves are looked out for. They generally run with vessels, and a little bleeding, sometimes troublesome, since it obscures the view, is often the first indication of their proximity. Running in relation with the aponeurosis, often strands of the latter simulate them and cause some anxiety as to division, but on examination the nature of these supposed nerves becomes clear. When found, nerves are hooked up out of the way, and the abdominal cavity opened by incising the aponeurosis deep to them, first by the knife and then with scissors.

The sewing up is important. After closing the peritoneum the incision in the aponeurosis deep to the transversalis is closed as a separate step. I always use mattress sutures of formalin catgut for this, and usually three, sometimes two, suffice. The gap caused by the retraction of the cut transversalis and internal oblique muscle fibres is next dealt with. It is closed by a continuous suture, which picks up first tissue on the inner side (on the anterior aspect of the rectal sheath, here deep to the external oblique aponeurosis), and then the superficial part of the muscle layer on the outer side, and so on—in the manner of making a peritoneal stitch, the raw edges of the cut muscle being turned in and buried. The external oblique is sewn up by a continuous catgut, and the subcutaneous tissue and skin in any way preferred.

The advantage of this method is that the incision can be extended upwards or downwards with impunity, according to the position of the appendix, and the ease or difficulty experienced in dealing with it. The nerves can usually be avoided, and even if one be cut only a part of the lower rectus is affected. Battle's incision offers certain advantages. On displacing the rectus inwards the nerves are much more easily seen and avoided; but the incision is sometimes too far inwards. By either of these methods one assures one's patient of a good abdominal wall—certainly in the region of the wound; and, according to Mr. Griffiths, a liability to a subsequent right inguinal hernia is not induced.

I am, Sir, yours faithfully,

Rugby, Dec. 11th, 1919. R. H. PARAMORE, F.R.C.S. Eng.

To the Editor of THE LANCET.

SIR,—Mr. St. George Griffiths, in his paper in your issue of Dec. 6th on the frequency of inguinal hernia after appendicectomy by the gridiron incision, does not appear to be familiar with the work previously done in this connexion. It was pointed out by Dr. A. MacLennan[1] that the important detail in

[1] Practitioner, April, 1912.

doing the gridiron incision was to avoid cutting the ilio-inguinal nerve, which pierces the flank close to the anterior superior iliac spine. The transverse split in the parietes should therefore be above this level. The ilio-hypogastric nerve may be interfered with as it crosses the gap, but it is left to supply the muscle fibres above the gap.

Secondly, it is now the practice of some surgeons, having opened the abdomen by the gridiron incision, to palpate the internal abdominal ring from within, and in a surprising number of cases there is found a hernial sac which has never been occupied. In many cases the cure of this potential hernia can be completed with ease at the same operation. It is generally admitted now that oblique inguinal hernia is practically always of congenital origin.

The explanation would therefore appear to be that in the cases investigated the split in the internal oblique and transversalis muscles was faulty, leading to future atrophy of muscle around the ring and permitting the occupation of a congenital sac already present.

I am, Sir, yours faithfully,

Glasgow, W., Dec. 8th, 1919. R. TENNENT.

To the Editor of THE LANCET.

SIR,—The occurrence of right inguinal hernia appearing for the first time shortly after the removal of the appendix by the gridiron incision, to which Mr. C. H. C. St. G. Griffiths called attention in your issue of Dec. 6th, has attracted the attention of the surgeons at the City of London Truss Society for some years, and shortly before the war we began to keep a special record of the cases, but owing to war conditions this has not been kept up during the last five years, so that we have no accurate statistics. We saw, however, roughly between a dozen and 20 cases a year out of a total of about 6000 cases of all varieties of hernia.

I have personally never seen a hernia which had occurred after the rectus incision, nor have I seen a left-sided hernia after the gridiron incision. As right inguinal herniæ in men are to left as 6·6 to 3·8 and in women as 6·9 to 6·1 (Macready), this absence of left-sided herniæ following the operation seems to point to a definite connexion between the right-sided herniæ and the gridiron incision. I propose during the coming year to keep a record of the numbers of right and left inguinal herniæ and of the cases in which a previous appendicectomy had been performed.

I am, Sir, yours faithfully,

Harley-street, W., Dec. 15th, 1919. J. E. H. ROBERTS.

THE TREATMENT OF MALARIA.

To the Editor of THE LANCET.

SIR,—Dr. W. H. Willcox has written in THE LANCET of Dec. 13th giving his views on the treatment of malaria as the result of his service in Mesopotamia. There are a couple of paragraphs in that letter which I feel should not pass unchallenged. Par. 3 states: "Quinine in subcutaneous injection is liable to produce necrosis," and Par. 4 advocates intramuscular injections in preference.

For many years now I have treated malaria by subcutaneous injections, and during that time have given hundreds of injections without once producing necrosis or an abscess; but during that time I have met many patients who had suffered much from intramuscular injections with resulting abscesses. In the *Indian Medical Gazette* of December, 1917 (p. 426), Major MacGilchrist, I.M.S., demonstrated the local necrosis produced by intramuscular injection of quinine, dissecting out the abscess and track, which showed necrosis extending along the track of the needle.

I have followed the method advocated by Colonel (then Captain) C. A. Johnston, C.B., D.S.O., I.M.S., nearly 18 years ago in a memorandum written for the P.M.O., H.M. Forces in India, and published in the *British Medical Journal* of March 29th, 1902 (p. 793). It is along the following lines:—The preparation of quinine is freshly prepared bisulphate, and for the average-sized man or woman the dose is 4 gr. This is dissolved in 20 minims of a 0·5 normal saline solution and injected into the subcutaneous tissue of the flank between the iliac crest and the last rib, using alternate sides. The main precautions are: thorough cleansing of the site of injection and the use of an all-glass syringe with a stout needle. The subcutaneous tissue should be broken up by the needle before injecting the fluid. The solution should be brought to boiling point in a test-tube and injected while at a temperature of 100° F. This for three reasons: (1) It is more easily absorbed at this temperature: (2) if allowed to cool the quinine will separate out and jam the piston in the syringe; (3) it is not felt so much by the patient as it is isotonic. Before injecting the needle should be dipped in 5 per cent. of carbolic oil, and after injection the side should be gently massaged with warm oil on wool for a few minutes, in order to distribute the fluid. The injection should be repeated for five days consecutively. The after-treatment is 1/20 gr. arsenious acid and 5 gr. quinine well diluted and by mouth in early morning daily for one month. This method of treatment was tried in East Africa with great success, and I have met medical officers who were converted to this simple plan by experience in their own cases.

Reformers in our conservative country have a very difficult fight, and it is only now being admitted in India that quinine is not a prophylactic, though Colonel Johnston has for years preached this fact as a result of extended experience in India and during tropical campaigns in Burmah, India, and China. A very important point, and one often overlooked in fever occurring in patients who have been abroad, is that the diagnosis should be established by a blood examination where possible, as patients are too apt to call all febrile attacks malaria. I might add that I contracted malaria in Mesopotamia in 1916 in spite of a daily dose of quinine.

I am, Sir, yours faithfully,

BRUCE BRUCE-PORTER.

Grosvenor-street, W., Dec. 15th, 1919.

DEXTROCARDIA.

To the Editor of THE LANCET.

SIR,—With reference to your annotation in THE LANCET of Dec. 13th on Dextrocardia and Dr. B. Parsons-Smith's paper in the same issue, I exhibited a case at a clinical meeting of the British Medical Association at Canterbury in May, 1905. It was a tuberculous woman of about 30 years of age. The apex beat was in the fourth right interspace. There was no transposition of other viscera.

I am, Sir, yours faithfully,

A. R. HENCHLEY.

National Liberal Club, Victoria-street, S.W., Dec. 13th, 1919.

THE PREVENTION OF VENEREAL DISEASE.

To the Editor of THE LANCET.

SIR,—In corroboration of Sir Archdall Reid's letter in your issue of Dec. 13th, concerning early prophylactic treatment of venereal diseases, a few facts in my small experience in Turkey may be of interest. I became attached to a battalion that had just come to Constantinople, and in the first month although only 400 strong, 13 cases of venereal disease occurred. At this point the prophylactic tubes and bottles were issued. I thereupon lectured the men and tried to impress upon them all the horrors and dangers, present and future, of venereal disease and finished up by explaining how to use these applications. I did not put them forward as a certain insurance but rather as a last hope.

During the next three months that I was with this battalion 600 of these tubes were used and *not a single case* of venereal disease occurred among those men so using them, while 6 cases occurred among men who did not, or could not, procure them. In one case I was able to obtain the fact that of three men who had been with the same woman within a short time of each other two had used the applications and escaped infection, while the third, who scoffed at treatment, got gonorrhœa.

Two points I deduced from this: (*a*) That in spite of my—as I thought—most stirring and impressive address

a large number of these tubes became necessary, showing how little is the influence of words, whether spoken or written, on the men's conduct. (*b*) The extraordinary immunity gained by these simple early prophylactic measures in a highly infected district if properly carried out. I fortunately had an orderly who took great interest in this work.

I am, Sir, yours faithfully,

B. R. PARMITER, M.B., B.S.

Guy's Hospital, S.E., Dec. 13th, 1919.

SURVIVAL OF QUADRUPLETS.

To the Editor of THE LANCET.

SIR,—Some years ago I saw a lady, about 6 ft. high, who surprised me by saying that she was one of quadruplets, the other three being boys who all grew up to be strong and over 6 ft. in height and were serving in the same regiment in India. I am aware that "what the policeman said is not evidence," and the same applies to a patient's statements; but as there was no reason why the patient should state what was not true I think perhaps the survival of quadruplets may not be so rare as is supposed.

With regard to the influence of the male in producing multiple pregnancies, the case alluded to in the annotation in your issue of Dec. 13th is not so striking as the one mentioned by Charpentier. It was that of a Russian peasant, married twice, who had 87 children by his two wives. His first wife had quadruplets 4 times, triplets 7 times, and twins 16 times. His second wife had triplets twice and twins 6 times.

I am, Sir, yours faithfully,

Harley-street, W., Dec. 15th, 1919. HERBERT R. SPENCER.

GENERAL MEDICAL COUNCIL ELECTION: ENGLAND AND WALES.

To the Editor of THE LANCET.

SIR,—Will you allow me to express my sincere thanks to the 1636 doctors who voted for me? The result far exceeded my expectations. I had no committee nor funds to circularise all the electors.

I am, Sir, yours faithfully,

Blackpool, Dec. 12th, 1919. JNO. BROWN, M.D.

MYALGIC PAINS AND MANIPULATION.

To the Editor of THE LANCET.

SIR,—In his article on Myalgic Pains in THE LANCET of Nov. 29th Dr. Madison Taylor calls attention to the value of "really expert" manipulation in these cases. But where are the really expert manipulators to be found, and where are the regular practitioners who are competent to direct their operations? Such is the barrier of suspicion and prejudice that surrounds these methods of practice, it happens, that while no enlightened modern surgeon can deny the brilliant results obtainable in appropriate cases, the cures stand chiefly to the credit of the irregular practitioner or "bonesetter." Whilst in the field of physical therapeutics every other path is being mapped and explored and fully utilised for the benefit of humanity, this one—call it manipulative surgery, or bonesetting, or what you will—remains a no man's land, or is left to the operations of the franc-tireur.

The following illustrative case was throughout its course under my daily observation:—

The patient, a full-grown girl of more than average height, with no tendency to rheumatic or arthritic trouble, had for a year previous to her illness been in active work in garden and with car, and was in full health and strength. One night in February she woke with a rather severe pain in the sacral region. Next day, finding it had nearly gone, she continued her work. But she found the pain returned when she walked, and day by day was less able to walk or stoop on account of it. After a week she consulted me. I found evidence of fibrositis, the clinical signs being tenderness on deep pressure over the sacral spines and the left sacro-iliac synchondrosis. She felt most comfortable in a relaxed bent position, extension of the spine being painful. Walking, hitherto fast and free, could only be done at a crawl, and her carriage, usually erect, was a slouch. After two months of treatment by rest, massage, ionisation, and various local and general remedies, she was worse rather than better. Notwithstanding occasional remissions with improvement of a temporary character, she was changed from an active, free-striding girl to a semi-invalid, capable of only doing a few hundred yards at a crawl. At this stage I took her to a consulting surgeon of repute, who prescribed certain treatment which was followed for another two months, but with no more success than with my own.

Having fortified my own opinion by those of a general physician, and also a gynæcologist, that no intra-pelvic, tuberculous, or other organic disease was present, I determined that some form of "really expert" manipulation was required. Knowing no one within the ranks of the profession able or willing to give the treatment that was in my mind, I took her to a well-known "bonesetter." He at once stated that the condition was familiar to him, and proceeded to some manipulations. The two manœuvres he executed were both new to me, though I have had more than average experience of various forms of physical treatment both at home and in Sweden.

The first somewhat resembled that described in Anders Wide's medical gymnastics as "stretch leg-forward-lying side flexion," but with the difference that the operator did it alone with patient at full length prone on a couch, instead of the three gymnasts as directed by Wide. With one hand on the sacrum, the other under the left shoulder, the operator forcibly extended and rotated the trunk a few times in rapid succession while keeping the pelvis immobile on the couch. The second movement was done while patient was prone as before. One hand being on the sacrum keeping the trunk on the couch, the other hand was applied below both knees in such a way as to over-extend the hip and lumbo-sacral joints. Both movements require great muscular effort, and during each sounds as of giving way of adhesions were clearly heard. The patient was immediately relieved by the first treatment; it was repeated again at a week's interval, and she has remained quite well since.

In conclusion I can only express a hope that this plain tale of a personal experience may do something to dispel a prejudice too general in the profession, and encourage a study and practice of methods as old and historic as they are scientifically interesting and valuable.

I am, Sir, yours faithfully,

Dec. 3rd, 1919. NON QUIS, SED QUID.

CORRIGENDUM.—In Dr. J. Elliott's interesting paper on an Achondroplasic Skull, which we published last week, a date was inserted to make clear that the "Edwardian" walls of Chester meant walls built in the Plantagenet era. For immediately in front of the sentence came the date "1912 to 1914." Dr. Elliott points out that the interpolation, being the date of Edward II., might commit him to a definite statement on a matter which has been much in dispute—namely, the precise date of the building of the ancient walls.

URBAN VITAL STATISTICS.

(Week ended Dec. 13th, 1919.)

English and Welsh Towns.—In the 96 English and Welsh towns, with an aggregate civil population estimated at 16,500,000 persons, the annual rate of mortality, which had been 14·8, 13·8, and 14·4 in the three preceding weeks, fell to 13·9 per 1000. In London, with a population slightly exceeding 4,000,000 persons, the annual death-rate was 13·4, or 1·1 per 1000 below that recorded in the previous week, while among the remaining towns the rates ranged from 7·4 in Bournemouth, 8·1 in St. Helens, and 8·3 in Walthamstow, to 20·2 in Grimsby, 21·3 in Bath, and 22·0 in South Shields. The principal epidemic diseases caused 282 deaths, which corresponded to an annual rate of 0·9 per 1000, and comprised 76 from measles, 75 from diphtheria, 58 from infantile diarrhœa, 44 from whooping-cough, 27 from scarlet fever, and 2 from enteric fever. Measles caused a death-rate of 1·5 in Preston and in Sunderland, 1·8 in Tynemouth, 2·2 in Burnley, 2·7 in Barrow-in-Furness, and 2·9 in Carlisle; whooping-cough of 1·6 in East Ham and 1·7 in West Hartlepool; and diphtheria of 1·7 in Plymouth. The 81 deaths from influenza were 4 in excess of the number in the previous week, and included 17 in London, 7 in Manchester, 6 in Birmingham, and 4 in Stoke-on-Trent. There were 2947 cases of scarlet fever and 1796 of diphtheria under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, against 2990 and 1699 respectively at the end of the previous week. The causes of 28 deaths in the 96 towns were uncertified, of which 6 were registered in Birmingham and 3 in Preston.

Scotch Towns.—In the 16 largest Scotch towns, with an aggregate population estimated at nearly 2,500,000 persons, the annual rate of mortality, which had been 18·6, 15·0, and 15·3 in the three preceding weeks, fell to 13·5 per 1000. The 284 deaths in Glasgow corresponded to an annual rate of 13·2 per 1000, and included 5 from diphtheria, 3 each from scarlet fever and infantile diarrhœa, 2 from measles, and 1 from whooping-cough. The 79 deaths in Edinburgh were equal to a rate of 12·2 per 1000, and included 1 each from whooping-cough, diphtheria, and infantile diarrhœa.

Irish Towns.—The 147 deaths in Dublin corresponded to an annual rate of 18·9, or 1·3 per 1000 above that recorded in the previous week, and included 3 from infantile diarrhœa, 2 from whooping-cough, and 1 each from measles, scarlet fever, and diphtheria. The 160 deaths in Belfast were equal to a rate of 20·8 per 1000, and included 14 from measles, 12 from scarlet fever, 3 from infantile diarrhœa, and 1 each from enteric fever and diphtheria.

Medical News.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—An ordinary meeting of the Council was held on Dec. 11th, Sir George Makins, the President, being in the chair.—A report was read from the Board of Examiners in Anatomy and Physiology for the Fellowship stating that at the recent examination 141 candidates were examined, including 53 who were admitted under the special war conditions, of whom 37 were successful, and 88 admitted under the ordinary conditions, of whom 30 were successful.—Sir Charters J. Symonds, as chairman of the Committee on the Special Primary Examination for the Fellowship, submitted a recommendation from the Committee that a special examination be held in November, 1920, in addition to the special examination to be held in May next. The recommendation was approved and adopted.—A report was read from the Court of Examiners respecting candidates found qualified for the Fellowship. The report stated that at the recent examination 71 candidates presented themselves for the final examination and 21 of these were successful. It was resolved to grant diplomas of Fellowship to the following successful candidates:—

Arthur Wilfrid Adams, Bristol Univ. and London Hosp.; Gerald Victor Wright Anderson, Univ. Coll. Hosp.; Margaret Mary Basden, Royal Free and London Hosps.; Rustam Nusserwanji Cooper, Univ. Coll. and St. Bart's. Hosps.; Alfred George Timbrell Fisher, Bristol Univ. and St. Bart.'s Hosp.; William Allan Hailes, Melbourne Univ. and London Hosp.; Rhys Trevor Jones, Cardiff and St. George's Hosp.; Thaddeus Julian, Otago Univ. and Middlesex Hosp.; Robert Kennon, Liverpool Univ. and London Hosp.; Frederick Buick McCarter, Dublin Univ. and London Hosp.; Frederick Arthur Magnire, Sydney Univ. and London Hosp.; Edward Thomas Campbell Milligan, Melbourne Univ. and London Hosp.; Charles Melton Ockwell, Guy's Hosp.; Martin Herbert Oldershaw, Univ. Coll. Hosp.; Alfred Bernard Pavey Smith and William Agard Pocock, Cambridge Univ. and St. Bart.'s Hosp.; Aubrey Radford, Edinburgh Univ. and London Hosp.; Tribhovandas Oghaddar Shah, Bombay Univ. and London Hosp.; Simeon Cyril Shaw, Middlesex Hosp.; Raghunath Dadoba Shirwalkar, Univ. Col. and St. Bart.'s Hosps.; and Alfred John Trima, Melbourne Univ. and London Hosp.

Diplomas of Member were conferred upon the following, who have now complied with the by-laws:—

G. Perkins, Oxford Univ. and St. Thomas's Hosp.; and H. H. Perry, Manitoba Univ. and London Hosp.

In accordance with a report from the Board of Examiners in Dental Surgery it was resolved to issue diplomas in Dental Surgery to the following successful candidates:—

R. D. Amin, Guy's Hosp.; H. E. Attkins, National Dental Hosp.; W. F. E. Badcock, Royal Dental Hosp.; V. H. Ball, London Hosp.; C. C. de A. Birch and I. Bitar, Guy's Hosp.; F. E. S. Brailsford, Middlesex Hosp.; F. Brazilier and E. G. Browne, Guy's Hosp.; A. E. Burt, Royal Dental Hosp.; A. J. Chiappa, National Dental Hosp.; B. P. Cousins, Guy's Hosp.; J. D. Crawford, Liverpool Univ.; S. W. Fisk, Royal Dental Hosp.; J. A. Gilbert and J. K. Grayson, London Hosp.; L. R. J. Hallett, Guy's Hosp.; R. Hawksworth, Manchester Univ.; J. J. L. Hollington and J. Lauer, Guy's Hosp.; S. G. Mace, Liverpool Univ.; C. B. Marsh, Manchester Univ.; Helen Patricia Clara Mayo, National Dental Hosp.; P. J. Morrison, F. J. Ordish, H. P. Parkes, and W. D. Penfold, Guy's Hosp.; E. Pitt, Royal Dental Hosp.; S. E. Pomeroy, London Hosp.; A. D. Ray, Manchester Univ.; J. W. Royston and R. F. Sievers, Royal Dental Hosp.; G. E. Smith, Liverpool Univ.; H. Muir Smith, Guy's Hosp.; C. W. Spendelow, Royal Dental Hosp.; H. A. Spouse, Guy's Hosp.; R. F. J. Sterwin, London Hosp.; L. H. Van der Pant, Royal Dental Hosp.; Enid Walker, National Dental Hosp.; G. A. O. White, Royal Dental Hosp.; C. A. Wilson, National Dental Hosp.; T. A. M. Wilson, Guy's Hosp.; E. E. Wookey, Bristol Univ.; and H. M. Worth, Guy's Hosp.

Mr. H. S. Pendlebury was elected a member of the Court of Examiners.—Mr. John Murray was elected a member of the Board of Examiners in Dental Surgery.—A letter was read from Dr. Addison, Minister of Health, acknowledging the secretary's letter transmitting the resolution of the Council with reference to the shortage of anatomical subjects.—The President reported the delivery by Sir John Tweedy, on Dec. 3rd, of the first Thomas Vicary lecture on "The Surgical Tradition." The best thanks of the Council were given to Sir John Tweedy for his lecture.—The revised regulations for admission to the Museum were approved and confirmed.—A report was read from the Committee on the annual report of the Council. The report was received and entered on the minutes, and its consideration was postponed to the next meeting of the Council.

ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH.—At the annual meeting of the Royal College of Physicians of Edinburgh, held on Nov. 27th, Sir Robert Philip was unanimously re-elected President of the College for the ensuing year. The Council for the year was elected as follows: Dr. A. H. F. Barbour (Vice-President), Dr. F. D. Boyd, Dr. George M. Robertson, Dr. Robert Thin, Dr. Lamond Lackie, Dr. Harry Rainy.—At an extraordinary meeting on the same date Dr. Jonathan Campbell Meakins was admitted to the Membership of the College. The following distinguished and representative men, having accepted the offer of Honorary Fellowship, were unanimously elected Honorary Fellows of the College: Professor Hermann M. Biggs, M.D., M. Georges Clemenceau, Professor Kitasato. The office-bearers for the year 1919–20 are:—President: Sir Robert Philip. Vice-President: Dr. Barbour. Treasurer: Dr. Norman Walker. Secretary and Registrar: Dr. J. S. Fowler. Librarian: Dr. D. Berry Hart. Curator of Research Laboratory: Dr. J. J. Graham Brown.

UNIVERSITY OF LIVERPOOL.—On Dec. 12th Dr. A. Depage, Croix Rouge de Belgique, professor of clinical surgery in the University of Brussels, delivered the Mitchell Banks memorial lecture at the University of Liverpool before a distinguished audience. He took as his subject "L'Enseignement de la Guerre pour la Chirurgie du temps de Paix," and pointed out that the experiences of war had increased our knowledge of, and our means for dealing with, the "dirty" wound, lung injuries, and injuries to nerves, bones, and joints. The lecturer showed himself to be a man not only of resource but of vision and enthusiasm. A number of excellent lantern-slides added interest to the lecture, which was greatly appreciated.

LIVERPOOL MEDICAL INSTITUTION.—At a meeting of the Liverpool Medical Institution (Pathological Section), held on Nov. 27th, with the President, Mr. Thelwall Thomas, in the chair, Dr. J. G. Adami read a paper on Diphtheroids. He gave a historical sketch of the research work that had been done towards classifying the diphtheroid group, and pointed out that we were still in a transitional state of knowledge as regards these, in common with the dysenteric, choleraic, meningococcic, coliform, and other groups. Differentiation by the old-fashioned method of staining, after culture, on Löffler's blood serum was unsatisfactory; morphology did not safely differentiate the infinite range of variations found by other methods. So far as fermentation reactions could help it was best to employ only four or five (particularly dextrose, dextrin, saccharose, and lactose), but the results from these were suggestive and directive rather than definitive. The development of toxicity for guinea-pigs in a Dean's broth culture, more especially a hæmorrhagic adrenal lesion, was the only accurate test, and was recommended for all doubtful cases. He detailed an investigation, directed by himself, of diphtheroid wound infection occurring among Canadian soldiers. Of 306 open and infected wounds 2 showed true Klebs-Löffler bacilli and 56 diphtheroids; two of these latter gave all the reactions of Klebs-Löffler except the virulence test. It was demonstrated that a wound might yield no membrane and yet harbour virulent diphtheria or develop membrane and yet be merely diphtheroid. He considered it probable that true relationships would eventually be defined by complement-fixation tests, and suggested as a further method likely to clarify the field the adoption of sensitisation reactions—a weak form being used later to sensitise the guinea-pig to the inoculation of the strain under investigation.

On the evening of Dec. 13th the Institution held its dinner at the Exchange Station Hotel. As this was the first dinner of the society since 1913 there was an unusually large number of members and their friends present, nearly 200 in all. Mr. Thelwall Thomas, the President, occupied the chair, and he was supported by the Lord Mayor, the Bishop of the diocese, Lord Russell of Liverpool, the Vice-Chancellor of the University, and Professor Depage and Dr. Pechère, of Brussels. Among the other guests were the stipendiary magistrate, the city coroner, the presidents of the Manchester, Chester, Birkenhead, Southport, and St. Helens Medical Societies, Mr. Joseph Conrad, and Dr. W. T. Grenfell, of Labrador. Lord Russell proposed the toast of "The City and University of Liverpool," and spoke of the distinction and authority of Liverpool's physicians and surgeons during the

long period of 60 years during which he had been associated with the city. He looked in the future for an even closer alliance between the city and the University than that which already existed, and he testified to the great expectations which had been excited by the appointment of Dr. Adami to the post of Vice-Chancellor. The toast was coupled with the names of the Lord Mayor and the Vice-Chancellor. In responding the Lord Mayor stated that so far as secondary education was concerned, Liverpool was ahead of any city in the country. He also bore generous testimony to the war efforts of the medical profession of the city. Dr. Adami said that he was determined to make the University realise what it could do for the community, and to quicken in all classes an interest in higher education. The University was the coping-stone of the city's educational system. The medical school had a glorious past, an active present, and a greater future. They must attract graduates from the colonies and the United States to take their post-graduate courses in the city. As a political move alone that was of prime importance. Liverpool had now the chance of becoming the medical and surgical Mecca of the Empire, because the hospitals, with their gigantic amount of clinical material, were all within a narrow radius. In tropical medicine, orthopædics, and pediatrics there were opportunities for study and research in Liverpool offered by few, if any, other University cities. The toast of "The Medical Institution" was in the hands of the Bishop of Liverpool, who made an eloquent speech which received a felicitous response from the President. Major-General Sir Robert Jones proposed the health of the guests in racy terms, and Professor Depage and Dr. Pechère, Professor J. W. Smith of Manchester, Mr. H. Wade Deacon, and Dr. Grenfell of Labrador responded appropriately. For the first time in its history the dinner was attended by more than 20 medical women.

BATH WAR HOSPITAL.—Since this hospital was opened, in the spring of 1916, the institution has received 10,318 stretcher cases and 8391 sitting cases. The hospital is situated in the beautiful district of Combe Down, and it has been suggested that the Royal United Hospital should be transferred there. In all probability a scheme for this purpose will be proposed.

REDRUTH MINERS' AND WOMEN'S HOSPITAL.—The Red Cross Society recently offered the sum of £4000 for the Redruth (Cornwall) Miners' Hospital conditionally on a similar sum being raised locally. Sir E. Nicholl, M.P., who was born at Redruth, has given the sum required, so the hospital will now receive £8,000 towards the projected extension.

PRESENTATION TO A MEDICAL MAN.—Mr. H. C. Nance, F.R.C.S. Eng., was recently presented with a gold watch, a chiming clock, and a gold and pearl scarf-pin, "on his retirement from practice in Norwich, by a few of his grateful patients." He also received a silver centrepiece for the table from his partners—Mr. Hugh Whitwell and Mr. Bernard B. Riviere.

THE RAISING OF MEDICAL FEES IN LIVERPOOL.—A post-card plebiscite of the medical profession on the question of raising medical fees by 50 per cent. has recently been taken by the local branch of the British Medical Association. The result of the canvass has not yet been announced, but it is generally believed that a very large majority have declared themselves in favour of the suggested increase.

UNIVERSITY OF BIRMINGHAM.—During the spring term a course of post-graduate lectures on venereal disease will be given. Dr. Douglas Heath will lecture on syphilis and soft sore on Jan. 6th, 8th, and 13th; Mr. Bernard Ward on gonorrhœa in the male on Jan. 21st and 28th and Feb. 4th. Mr. Beckwith Whitehouse will give two lectures on gonorrhœa in the female, and one on syphilis in relation to pregnancy on Feb. 11th, 18th, and 25th. All the lectures will be at 4.15 P.M. In conjunction with the lectures clinical demonstrations will be given at the General and Queen's Hospitals. Admission to the lectures will be free, but for the course of clinical demonstrations there will be a fee of 2 guineas.

BIRMINGHAM CRIPPLES' UNION.—The *Birmingham Daily Mail*, in connexion with their annual Christmas Tree Fund, is making a special appeal in aid of a new convalescent home for the Cripples' Union. The new home will have an ideal site near Tanworth-in-Arden, 11 miles from Birmingham, in the heart of Warwickshire. Seven acres of land have been acquired at an elevation of 500 ft. and with a southerly aspect. There will be accommodation for 80 children. It will be arranged upon a circular plan, two wings curving out from a main administration block. It will be built on open-air lines and the sleeping accommodation will be open to the south or south-east. The home will relieve the present congestion at the institution at Northfield, and will enable patients to make a prolonged stay under the best possible conditions.

EDINBURGH OBSTETRICAL SOCIETY.—At the meeting of this society held on Dec. 10th Dr. Lamond Lackie read a paper on Artificial Rotation of the Head in Persistent Occipito-Posterior Positions. Dr. Lackie pointed out that the frequency of occipito-posterior positions is greater than is usually taught, and stated that in his practice they constituted about 30 per cent. of the total. The majority of cases rotate forward spontaneously, and as long as progress is being made the case should be left to nature. If the head is obstructed manipulative rotation should be attempted. If impaction of the head occur at the brim, the hand should be introduced under anæsthesia, the cervix further dilated if necessary, and the position corrected by manual rotation. If this fails, rotation by means of the forceps is often easily accomplished, the handles being swept round in a large circle to allow of rotation of the blades within the pelvis. Various cases were described by way of illustration. In the discussion which followed Dr. A. H. F. Barbour was of opinion that interference should never be made until the cervix was fully dilated. Dr. J. W. Ballantyne referred to the rectification of posterior positions during pregnancy. Dr. Haig Ferguson had often found it possible to rotate the head by continued rotatory pressure on the blades of the forceps with the fingers in the pelvis, or by Fabre's method, in which rotation was exerted on the forceps by tapes passed through holes in the blades. Dr. D. R. Dobie described a method in which the forceps were introduced reversed so that after rotation had taken place they lay in the normal position. Dr. R. W. Johnstone quoted from Smellie's text-book and showed that this obstetrician practised rotation with forceps for posterior positions several centuries ago. Dr. Berry Hart and Dr. Oliphant Nicholson also spoke.

BRISTOL MEDICO-CHIRURGICAL SOCIETY.—On Dec. 10th this society held a meeting at the University under the presidency of Professor I. Walker Hall.—Major F. P. Mackie, I.M.S., gave an address on his experiences as a bacteriologist in Mesopotamia. He had been in charge of a central laboratory, first at Amara and later at Baghdad; and also of an attached mobile laboratory. This work had covered a period of more than three years and his review may therefore be regarded as representing a broad survey of disease in Mesopotamia. He spoke of the enteric group, of dysentery, malaria, cholera, typhus, relapsing fever, beri-beri, scurvy, plague, oriental sores, and other infections. One interesting experience was the discovery of a malaria-infested village population in the neighbourhood of Lake Van, encountered by Major Mackie in a search for a convalescent area. The enteric infections were, he said, much more prevalent in 1916 than later. A strain which was called *B. paratyphosus C* was found and apparently traced to a source in Asia Minor, whence it had been conveyed by refugees. After Major Mackie's address came a discussion on Post-War Problems of Malaria, introduced by Dr. D. S. Davies, medical officer of health of Bristol, who gave an account of the difficulties created by the return of malarial subjects to Britain, and of the incidence of the disease in Bristol. Dr. S. J. Kerfoot and Dr. Cecil Clarke gave an account of their experiences in the pathology and treatment of malaria in the Macedonian Campaign, and Dr. M. Nierenstein, lecturer on bio-chemistry in the University, touched upon a few points of the recent researches into the action of quinine in malaria. Several other members also spoke, two of them bearing witness to the value of Major Mackie's work in Mesopotamia, of which they had been eye-witnesses.

SHEFFIELD MEDICO-CHIRURGICAL SOCIETY.—The Section of Pathology of this society held a meeting on Dec. 11th, when Dr. A. E. Barnes read a paper on Malaria in Salonika, and gave an interesting account, illustrated by lantern slides of his experiences in the treatment and prevention of the disease during his medical charge of a hospital there. Mr. A. W. Cuff showed a specimen of Papillomatous Growth of the Cæcum excised on account of an abscess simulating appendicitis. Dr. Godfrey Carter showed a specimen of Multiple Adenomatous Growth of the gastric mucosa found in a man who had died suddenly from cardiovascular disease. He had not suffered from stomach symptoms during life. Mr. E. F. Finch showed specimens and lantern slides of a series of cases of simple Ulcer of the Cæcum. The cases had each given rise to obscure symptoms suggesting appendicitis and calling for operation. The pathology of these unusual specimens was discussed at length, but no very definite conclusion was arrived at. The President, Dr. Arthur Hall, Dr. Carter, Dr. Graham Simpson, Dr. E. F. Skinner, Dr. Garrick Wilson, Dr. T. B. Mouat, Dr. Ferguson Wilson, Dr. Townrow, and others took part in the discussion.

THE Sheffield Medico-Chirurgical Society recently had the opportunity of inspecting a collection of war trophies obtained by various members from the different seats of war. It formed a large and varied display, from German paper bandages to West African native weapons, and included many interesting curios. Amongst the items was a genuine literal translation of a Bolshevist proclamation containing orders relating to the "use of women in common," which had been posted in public places in a large Russian town. It can only be described as the most appalling and degrading inhuman document which it is possible to conceive of. It is well worth the careful perusal of anyone with leanings towards Bolshevism and should prove a very valuable "alterative" to their condition.

On Dec. 4th the first of two annual "clinical evenings" was held at the Royal Infirmary. There was a large attendance of members and, thanks to the energy of the staff, an excellent collection of cases of high interest was provided for them.

AT a recent meeting of the board of directors of the Aberdeen Royal Infirmary Dr. Arthur W. Falconer, C.B.E., D.S.O., intimated his resignation of the office of assistant physician on his appointment to the chair of medicine in the University of Cape Town. The clerk was instructed to convey to Dr. Falconer the directors' appreciation of the service which he had rendered to the infirmary, along with their congratulations on his appointment, and best wishes for his future success. Dr. Falconer is 39 years of age. He graduated M.B., Ch.B., of Aberdeen University in 1901, M.D. with honours in 1907, and in the same year M.R.C.P. Lond. He studied for one year in Vienna and Berlin, and later spent six months in London doing post-graduate work. After holding appointments in Bradford, Bristol, and Aberdeen, Dr. Falconer was appointed assistant physician to the Aberdeen Royal Infirmary in 1912 and assistant to the professor of medicine at the Aberdeen University in 1913. Dr. Falconer was mobilised on the outbreak of war, and in 1916 went to Salonika as officer in charge of the medical division of the 43rd General Hospital. In March, 1917, he was appointed assistant consulting physician to the British Salonika Force with rank of Lieutenant-Colonel.

LADY CHICHESTER HOSPITAL, HOVE.—Mrs. Lloyd George on the first day (Dec. 10th), and the Countess of Chichester on the second day, performed the opening ceremonies at an Olde Englyshe Fayre at Hove in aid of the Lady Chichester Hospital, Aldrington House, Hove. Mrs. Lloyd George, in the course of a speech, spoke appreciatively of the work of Dr. Helen Boyle, and dwelt on the special claims for sympathy and help made by patients suffering from mental disorders.

THE Grand Priory of the Order of St. John of Jerusalem in England have forwarded to Mr. Evelyn Cecil, Secretary General, the sum of £1657 13*s*. 8*d*. as a contribution to the fund raised for reinstating and endowing the British Ophthalmic Hospital of the Order at Jerusalem, destroyed by the Turks on their evacuating Jerusalem.

THE next meeting of the Society for the Study of Inebriety will be held in the rooms of the Medical Society of London, 11, Chandos-street, Cavendish-square, W., on Tuesday, Jan. 13th, 1920, at 4 P.M., when Dr. Edward Mellanby will read a paper, illustrated by means of the epidiascope, on Recent Experimental Researches on Alcohol and Alcoholic Intoxication. Each member and associate may introduce a visitor.

THE LATE MR. W. F. SMITH.—Mr. W. F. Smith, Fellow of St. John's College, Cambridge, has died in his seventy-seventh year a genial and versatile scholar, whose researches had bearing in many directions on the course of medical studies. For Mr. Smith devoted many years to the study of the most prominent man of letters that the profession of medicine has produced. His translation of Rabelais, based on Urquhart, will long remain the standard English edition. His last work, "Rabelais in his Writings" (Cambridge University Press, 1918), contains an important chapter on Rabelais as physician and a carefully prepared list of the plants mentioned by him. In the course of his researches into the sources and references of Rabelais Mr. Smith read both widely and deeply in the volumes of mediæval and Renaissance medicine, and especially in the works of the "Arabists." He thus became an authority on this subject, and the skill and aptness with which he was able to quote from this recondite literature in illustration and comment on his favourite author was remarkable. His last public appearance was at a medical gathering and it was only a few months ago that he read before the Historical Section of the Royal Society of Medicine a very learned and humorous paper on the medical references in the works of Rabelais, a painstaking piece of work which merits publication. After this meeting Mr. Smith proceeded to Pau, where his death took place.

A DINNER of the staff (medical officers, sisters, and V.A.D.'s) of No. 14 General Hospital (Wimereux) will be held in London, at 8 P.M. on Monday, Feb. 2nd, 1920. Lieut.-General Sir John Goodwin will preside. Day dress will be worn. Application for tickets, price 12*s*. inclusive, should be made, together with remittance, to Miss Lawley, 9, Seymour-street, W.1, when the address of the restaurant will be given.

KING'S COLLEGE HOSPITAL DINNER.—A dinner in aid of the funds of King's College Hospital was held at Prince's Restaurant on Dec. 10th, when Prince Arthur of Connaught, in submitting the toast of the evening, said there was a building debt of £50,000 to be defrayed, £50,000 was required for new nursing quarters, £15,000 for a massage school and department, and £60,000 for additional income. The hospital, he pointed out, was situated in the heart of a district in South London ministering to a million and a half of very poor people, and he entered a strong plea for public support. While fully admitting the difficulties of the moment, he said the money was in the country, it had only changed hands. Viscount Hambleden, who responded, said he had faith in the charitable instincts of the British public, who, if they realised what the voluntary system had done in the past for the sick and suffering and for medical education, would give their whole-hearted support.

RE-EDUCATION OF THE CRIPPLE AT ST. THOMAS'S HOSPITAL.—A demonstration was held by Miss Randall in the Physico-therapeutic Department of St. Thomas's Hospital on Dec. 12th, on the re-education in walking and jumping of one-limbed officers and their training in the use of artificial limbs. The object of the demonstration was to show the results achieved at St. Thomas's Hospital in this direction. The training is based on the assumption that for the true motions of walking the remains of the leg or stump must be able to lift the artificial limb naturally. The officer demonstrating was a man of 40 with no special athletic training, who was occupied during the day and had attended the hospital only as an out-patient, and whose stump was 6 in. long. The limb supplied him by the Pensions Ministry, worn with a shoe, weighed about 10 lb., made of wood, and was too heavy. The limb used in the demonstration with shoe complete was made of metal, weighed 5¼ lb., and appeared equal to any strain put upon it. The exercises shown included Swedish drill, walking on a narrow bar, jumping blindfold to certain bars at varying heights from the ground, climbing and descending ladders one foot after another, and skipping. Visitors were obviously impressed at the magnificent results achieved, and cordial congratulations were offered to Miss Randall and her pupils.

INSURANCE PRACTICE: DEPUTATION TO DR. ADDISON.—Representatives of the Insurance Acts Committee of the British Medical Association met Dr. Addison in conference at the Ministry of Health on Dec. 4th to discuss the capitation fee for panel practice. The Minister was accompanied by Sir Robert Morant, Sir George Newman, Mr. R. W. Harris, Dr. H. M. Richards, Mr. G. F. McCleary, Dr. J. Pearse, Dr. J. Smith Whitaker, and others. The Insurance Acts Committee was strengthened by three nominees of the recent Representative Conference, Dr. J. D'Ewart (Manchester), Dr. J. Orton (Coventry), and Dr. Peter Macdonald (York). Sir Clifford Allbutt, who introduced the deputation, recalled the conditions of club practice when the capitation fee was 4*s*. a head, and emphasised the fall in the value of money, the longer time now required to examine a patient, the increased cost of medical training, and the need of a good standard of remuneration to attract the best type of student to take up insurance practice. Dr. H. B. Brackenbury recalled the resolution of the Conference of Representatives and its view that a capitation fee of 13*s*. 6*d*. was held to be a reasonable and irreducible amount. He stated that insured persons were increasingly asking panel doctors to visit them at home, and he regarded the present as a unique opportunity of setting the general practitioner service on a proper basis. Dr. H. G. Dain (Birmingham) spoke from his own experience of the high rate of disability among demobilised men, the early benefit of health from military training having, as the war went on, been more than wiped out by strain, and the improvement in the health of the civilian population having similarly been counterbalanced by overtime and continued stress. Dr. D. Ewart set out the striking figures showing how Manchester insurance practitioners had reduced their service rendered to represent a fair return for the remuneration received. Dr. A. Linnell (Towcester) spoke to the claims of rural practice. Dr. H. G. Cowie (London) and Dr. Macdonald showed that only a substantial increase in the fee would attract a good class of panel practitioner, the latter drawing a parallel with the standard of the Army Medical Service 20 years ago. Dr. Orton stated his experience in a munitions area.

Dr. Addison replied that no service, however dressed up with clinics and laboratories, could be a success unless the

general practitioner was efficient and content. He proposed to secure for the fair-minded man with a proper professional standard what that man would recognise to be a fair remuneration. At present no measure was available of the extent of work in treating the demobilised man. Frankly, he thought the case for the 13*s.* 6*d.* fee was not made out. The Government were committed to extra expense in regard to old-age pensions, unemployed benefit, and extension of cash benefits under the Insurance Acts, and regard must be had to the state of public finance. In reply to a question, Dr. Addison said that impending legislation would substantially increase the weekly contribution of the insured person, and some adjustment of the cost of medical benefit between Exchequer and insurance funds would follow. He suggested the fixation of a standard capitation fee for a limited term of years, plus a temporary addition (subject to annual revision) on account of the present high cost of living. Dr. Addison suggested a further conference after the Government had considered his proposals.

WEST LONDON POST-GRADUATE COLLEGE, HAMMERSMITH, W.—The following lectures and demonstrations have been arranged:—Saturday, Dec. 20th, 12 noon: Mr. H. S. Souttar, Surgical Anatomy of the Abdomen. Monday, Dec. 22nd, 12 noon: Dr. J. Burnford, Pathological Demonstration; 5 P.M.: Mr. S. G. MacDonald, Genito-Urinary Surgery. Tuesday, Dec. 23rd, 12 noon: Mr. Tyrrell Gray, Demonstration of Fractures. The winter session will commence Monday, Jan. 12th, 1920.

THE first meeting of the new Welsh branch of the Association of Medical Officers of Health was held at Cardiff on Dec. 12th, when Dr. E. Walford (Cardiff) was elected President. The new branch, which promises to be one of great vigour, dined together the same evening, when representatives of the Welsh Board of Health and the Welsh National School of Medicine were present, and expressed the hope that the work of the new branch would be of great assistance to them in their respective spheres.

A MEETING of the medical profession of Bournemouth and district was held recently at which the following resolution was unanimously adopted:—

"That owing to the increased cost of living and of working expenses by at least 100 per cent. and to the general depreciation in the value of money, the profession feels justified in recommending that the pre-war rate of fees be increased by 50 per cent."

ROYAL MEDICAL BENEVOLENT FUND.—At the last meeting of the Committee held on Tuesday, Dec. 9th, 27 cases were considered and £343 voted to 23 of the applicants. The following is a summary of some of the cases relieved:—

Widow, aged 77, of M.R.C.S. Eng. who practised at Watton and died in 1893. Only income an annuity of £56 8*s.* 8*d.* She pays £16 a year rent. Now unable to do any work owing to loss of eyesight. Voted £12 in 12 instalments.—Daughter, aged 68, of M.D. Edin. who practised in London and died in 1874. Receives £52 from the firm where she used to work. Has recently been playing the piano at a cinema, but has been obliged to give it up on account of her health. Friends help to provide coal in the winter. Rent £44 a year. Voted £12 in 12 instalments.—M.D. Lond., married, who practised in London. Now entirely incapacitated and bedridden. Wife earns £2 2*s.* a week as a clerk, and obtains a little by selling personal belongings. Rent £1 1*s.* a week for six rooms, three of which are given to a man and his wife in return for wife's services during the day, when she looks after the applicant. Voted £26.—Daughter, aged 67, of F.R.C.S. Eng. who practised at Hull and died in 1887. Receives £25 from another charity and lives in a home where she has three rooms and receives £25 a year. Cannot manage owing to the high cost of living. Voted £12 in 12 instalments.—Daughter, aged 55, of M.R.C.S. Eng. who practised at Bideford and died in 1898. Received £25 from dividends and £13 from sister. Rent £44 for three rooms, shared by sister. Unable to earn own living owing to ill-health. Cannot manage owing to the high cost of living. Voted £5.—Widow, aged 58, of M.R.C.S. Eng. who practised at Yelverton and died in 1908. This year has received £140 from paying guests. Rent and rates £42. Cannot manage owing to lack of boarders. Relieved 13 times, £155. Voted £12 in 12 instalments.—Daughter, aged 46, of M.R.C.S. Eng. who practised at Blackheath and died in 1881. Receives £43 from other charities and £10 from dividends. Used to be a hospital nurse, but now unable to work. She boards with her half-brother. Suffers from ill-health. Relieved once, £10. Voted £10.—Daughter, aged 41, of M.R.C.S. Eng. who practised at Streatham and died in 1914. Only income £20 a year left by grandfather. Lives with mother who is an invalid. Applicant suffers from ill-health. Mother receives help from the Fund. Relieved five times, £25. Voted £5.—Widow, aged 73, of L.R.C.P. Edin. who practised at Cardiff and died in 1906. Only income £70 from other charities. Board and lodging £52 a year. Has two sons, both married, and unable to help. Relieved 14 times, £100. Voted £9 in 12 instalments.—Widow, aged 60, of L.S.A. Lond. who practised at Islington and died in 1905. No income. Keeps house for nephew, for which she receives board and lodging. Receives help from the Guild. Suffers from ill-health. Relieved 14 times, £178. Voted £18 in 12 instalments.—Daughter, aged 62, of L.R.C.P. Lond. who practised at Brierley Hill and died in 1872. Only income £26 from another charity and £6 from friends. Pays £13 a year for a furnished room. Relieved £12 times, £96. Voted £18 in 12 instalments.

Subscriptions may be sent to the acting honorary treasurer, Dr. Samuel West, at 11, Chandos-street, Cavendish-square, London, W. 1.

Parliamentary Intelligence.

HOUSE OF LORDS.

THE PREVENTION OF VENEREAL DISEASE.

Lord WILLOUGHBY DE BROKE called attention to the prevention of venereal disease by the method of immediate self-disinfection, particularly in view of the Note on Prophylaxis against Venereal Disease by the chairman of the Inter-departmental Committee on Infectious Diseases in connexion with demobilisation, and asked the Ministry of Health what steps they were taking to instruct the public in the proper application of immediate self-disinfection at the time of exposure to infection; what steps they were taking to provide for delayed disinfection at early treatment centres; and moved for papers giving information as to the yearly incidence of venereal disease in the Portsmouth area as compared to the rest of England; and for Colonel Keble's reports and for the Hilsea Hospital records, giving information as to the relative frequency in hospital of men who had used immediate and delayed disinfection respectively.

The Present State of Affairs.

He said he made no excuse for calling attention again to this extremely important subject, which was one which vitally affected the health and life of the race. Sir William Osler said it stood third or fourth in the great killing diseases of the world, and had effects not only upon those who ran the risk of infection, but also upon the innocent and unborn. Venereal disease had increased and was increasing, and it ought to be diminished. He brought forward the motion in order that the general public might know the truth with regard to immediate self disinfection at the time of exposure to venereal disease. It seemed to him that apart from the lectures given by the National Council for the Control of Venereal Diseases, which were admirable in their way as far as they went, no real progress had been made in trying to stamp out this disease. The whole trend of Lord Astor's report was dead against the policy which he recommended to their lordships that afternoon—namely, the idea of immediate disinfection, although rather curiously it admitted that drugs and medical preparations might be relied upon to remove or destroy the germs of venereal disease. That was a valuable admission, but in spite of this the report appeared so incomplete, and so unsatisfactory from the point of view of some of the most prominent and learned venerealogists in the United Kingdom, that they had formed themselves into a new body called the Society for the Prevention of Venereal Disease, with which he was connected. That society was charged with recommending nothing but what was called the issue of prophylactic packets at the expense of the user. Prevention was better than cure. It was quite true that since the discovery of salvarsan the cure of syphilis had become more absolute, but at the same time the cure of gonorrhœa, in the sense of the complete sterilisation of the patient and rendering him or her innocuous to others, still remained a desperate public problem.

Delayed and Immediate Disinfection.

Even the most sanguine advocate of universal marital continence must admit that continence of that kind was not yet, and that it would take a good many generations before it operated to eradicate venereal disease. Disinfection was the acknowledged practice with all contagious diseases, and venereal diseases were contagious. The disinfection of women, in the sense of using disinfectants, in the way they recommended that men should use them, was difficult because woman was not structurally suited to receive the disinfectant with the same ease as man. But, so far as they knew, the results of the disinfection of women had been efficacious. There were two known methods of disinfection No. 1 was slow, or delay disinfection; No. 2 was quick or immediate disinfection. The National Council for Combating Venereal Disease had apparently accepted the principle of disinfection, and the Ministry of Health had gone so far on the road to disinfection, after a considerable amount of hesitation, that they were prepared to advise the construction of a number of what were called early treatment centres, which meant the provision of ablution rooms at the public expense, where those who had exposed themselves to risks might repair as soon after having connexion as possible in order that they might be scientifically treated by a skilled attendant. He should be very anxious to hear what progress was being made with the provision of these early treatment centres. The whole case against early treatment centres had been well put by the medical officer of health for Portsmouth. He (Lord Willoughby de Broke) was informed that the London County Council had stated its inability to provide these early treat-

ment centres. But supposing the County Council did provide them, who was going to use them, and how was everybody to know where these places were? Would patients repair there quickly enough after having connexion to do any good? It was a proved scientific fact that the micro-organisms of the disease began to get a much greater hold upon the organs every minute after they were deposited, and any delay after one hour very often was prejudical to success. For the first time in the history of venereal disease there was a danger, if it had not already reached beyond the point of danger, when men coming back from the war would bring these diseases into rural districts, and it was quite impossible to have an early treatment centre in a village in the country. He could well imagine that in urban districts people might easily be subject to espionage, and private detectives might be employed to watch people who were going to these centres, and it might very easily open the door to an elaborate system of blackmail. This question of early treatment centres required a great deal of careful examination before it was adopted. Time was the essence of the matter with regard to disinfection.

The Place of Moral Considerations.

He would put two questions to the school of thought which perhaps the Archbishop of Canterbury represented. Did they admit that exposure to risks of catching venereal disease was likely before universal continence prevailed to control the sexual instinct in such a way that there was no promiscuous intercourse between the sexes, or that while all this was going on the consequences of venereal disease were still likely to proceed? The second was this—if they answered this question in the affirmative, were they prepared to let their fellow-countrymen share in the latest teachings of science so as to protect them and their innocent and unborn descendants from these results? He submitted to their lordships, with great respect, that true morality ought to be free from and independent of the fear of catching venereal disease. The society of which he was a member intended to publish the fullest and latest scientific information by every means in its power.

Degree of Success achieved by Self-disinfection.

Lord SYDENHAM said that post-risk disinfection might be of two kinds. It might be carried out by skilled attendants or under skilled supervision, or it might be left to the care of the individual. He believed that medical opinion was quite unanimous that disinfection skilfully and vigorously applied within one or two hours would in all probability remove the risk of the disease. Medical opinion was also agreed that such disinfection might be carried out successfully when applied by exceptional people in exceptional circumstances. But the question really was whether an ordinary individual in special circumstances would be likely or not to disinfect himself effectively. That was not a medical question, but one which any layman was competent to judge on the evidence available. The American military authorities tried self-disinfection on a large scale, and abandoned it entirely in favour of disinfection by skilled attendants. The Australian evidence on this point seemed to him even more destructive of the views of Lord Willoughby be Broke. Obviously they could not apply self-disinfection to the civil population under such favourable circumstances as it was applied to the American army by whom it had been abandoned. He alluded to the fall of the incidence of venereal disease in the British army when the Contagious Diseases Acts were suspended, but thought it was a great pity that the Joint Select Committee, presided over by Lord Muir Mackenzie, was stopped when the last Parliament ended. He hoped that the Government would consider whether that Committee might not be set up again.

The ARCHBISHOP of CANTERBURY said that quotations had been made as if the medical authorities were chiefly on one side, but they should remember that the society which argued against the personal disinfection process and against the issue of packets and in favour of the other process—he was speaking of the civil population and not of the technically military question which concerned him less than the general population—the medical men on that side included the President of the Royal College of Physicians of London and the President of the Royal College of Surgeons of England, and such leading medical men as Sir Thomas Barlow, Colonel L. W. Harrison, and Sir Alfred Pearce Gould. It was trifling to say, therefore, that medical opinion was on one side. He earnestly hoped that no countenance would be given by the House to the recommendations put forward by Lord Willoughby de Broke.

The Earl of CLANWILLIAM supported the motion.

Earl RUSSELL said he was entirely inclined to support the campaign of Lord Willoughby de Broke, but he thought it needed caution in its administration.

Lord MUIR MACKENZIE asked the Government to state whether all the labours of the Joint Committee of which he was chairman were to be thrown away, or whether the Ministry of Health proposed to take any action on the subject.

The Government's Reply.

Viscount SANDHURST said he would consult the Minister of Health on the point raised by Lord Muir Mackenzie and inform him privately of the result. Lord Astor's Committee, to which reference had been made, was composed as follows: Viscount Astor, Chairman; Major W. C. Smales, D.S.O., M.R.C.S. (War Office); Colonel L. W. Harrison, D.S.O., K.H.P., M.B. (War Office); Surgeon-Captain D. J. McNabb, C.B., R.N., M.R.C.S. (Admiralty); Lieutenant-Colonel H. F. Horne, R.A.F., M.D. (Air Force); Dr. G. S. Buchanan, C.B., M.D. (Ministry of Health); Dr. F. J. H. Coutts, M.D. (Ministry of Health); Colonel A. L. A. Webb, C.M.G., C.B., M.R.C.S. (Ministry of Pensions); Mr. J. Smith Whitaker, M.R.C.S. (Insurance); and Sir Leslie Mackenzie, M.D., LL.D. (Local Government Board for Scotland). As regarded the question of self-disinfection, careful investigation had conclusively shown that even where disciplinary arrangements could be resorted to, and instruction could be definitely given, there were found among soldiers in venereal disease hospitals substantial numbers who stated categorically that they had used permanganate of potassium within a few minutes after exposure. It was thus clear that even under specially favourable circumstances the risk of venereal disease was by no means certainly avoided by this method. How much more would this be the case in regard to the civil population? As to the Portsmouth question, the information as to the number of soldiers admitted to hospital for venereal disease per 1000 of the total military strength in the United Kingdom and in the Portsmouth military area respectively showed that the incidence of venereal disease amongst the military in the Portsmouth area from 1912 to 1914 was approximately one and a half times greater than that amongst the military throughout the United Kingdom. In the years from 1916 to 1918 the rates for the Portsmouth area were approximately twice those of the United Kingdom; and in the year 1919 the rate in the Portsmouth area had been two and a half times that of the United Kingdom. He believed that he was right in saying that the policy advocated by Sir Archdall Reid was at its height in that area in the years 1918 and 1919. It was admitted that skilled disinfection very shortly after intercourse would usually prevent venereal disease, but inquiries at military hospitals showed that this was by no means the case when the disinfectant was applied by the man himself. In the venereal hospitals where this matter had been carefully investigated 7·3 per cent. of the patients stated that they had swabbed themselves with permanganate of potassium within ten minutes after exposure. A further 56 per cent. had similarly used calomel ointment, and a further 1·5 per cent. had used both calomel and permanganate. Thus in these two hospitals there were 12·4 per cent. of venereal patients who stated that they had disinfected themselves. In another hospital 11·2 per cent. stated that they had used one or other of the drugs or both within five minutes of exposure. This showed that to be effective instruction as to use of disinfectants must be given much more clearly and insistently than had been the case in the army. Instruction in the degree of detail necessary was a practical impossibility among the civil population. The Minister of Health was not prepared in the present position of the evidence to authorise a recommendation of any drug for these purposes. He would, however, be prepared to sanction the issue of advice in some such form as the following: "Those who have exposed themselves to infection are hereby advised that they have incurred great risk of venereal disease. Persons who have incurred such risk of infection will certainly diminish that risk, to some extent at least, by effectively cleansing themselves immediately. They are further advised to watch carefully for several weeks for the first signs of disease, and to seek medical advice at a clinic or elsewhere immediately such signs appear." In conclusion, the noble lord expressed his willingness to give Lord Willoughby de Broke the papers and figures asked for except Colonel Keble's report, which the Government had not got.

Lord RANKSBOROUGH regretted that nothing had been said in the debate about notification. He was convinced that if they were going to tackle and destroy this scourge they could only do it by the daylight of notification.

Lord WILLOUGHBY DE BROKE said that while he thought it was unfortunate that they had not proceeded further in combating venereal disease than a promise from the Minister of Health of a certain amount of soap-and-water, he would not put their lordships to the trouble of a division. He dare say they would hear a great deal more of this matter.

The motion before the House was by leave withdrawn.

Nurses' Registration Bills.

Viscount SANDHURST, in moving the second reading of the Nurses' Registration (No. 2) Bill, said he was glad to say that he was able to present it as an agreed measure. Those who had followed this controversy as he had done for a generation would be as pleased as surprised, and as surprised as pleased, with the result. Nursing was a noble profession.

He considered it the gentlest and most humane profession that existed. If without detriment to the public and within the four corners of this Bill the advantages which had been so constantly claimed for nurses' registration proved to be to the advantage of the profession he should indeed be glad.

Lord AMPTHILL offered his sincere and respectful congratulations to the Government and to the Minister of Health for having contrived to bring about an agreement in regard to this Bill.

Viscount KNUTSFORD said that nothing that could help nurses would be opposed by him, but he did not want the House to go away with the idea that this Bill could be of the smallest use to them. Nurses who belonged to the good training school to-day, when they obtained this registration would find themselves herded together with a lot of nurses who had had a very inferior training and whose only excuse for being on the register was that they had been bona fide nursing the public. There was no instance known of voluntary registration being of the smallest use, and under this Bill registration was voluntary and not compulsory. They had a very good example in the dentists' profession. The register was voluntary, and as a result the whole country was flooded with people who were not registered dentists.

The Bill was read a second time.

On the motion for the second reading of the Nurses' Registration (Ireland) Bill,

Viscount SANDHURST explained that the measure was practically the same as the Bill which had just been before the House, with the exception that the council, instead of consisting of 16 members, was to consist of 10.

The Bill was read a second time.

On the motion for the second reading of the Nurses' Registration (Scotland) Bill,

Viscount SANDHURST stated that it was identical with the other two Bills, except that the phraseology was different in order to meet what was customary in Scotland.

The Earl of KINTORE said he fancied that there might be some objection taken in Scotland to the provision that one of the examiners should be a registered female medical practitioner. However much they might wish that women should have an equal opportunity in the professions, he did not think that at the present moment women medical practitioners had any experience in teaching, lecturing, or examining.

Viscount SANDHURST said that that was a matter which might be gone into in Committee.

The Bill was read a second time.

HOUSE OF COMMONS

TUESDAY, DEC. 9TH.

Medical Boards Criticised.

The House went into Committee of Supply on a supplementary vote not exceeding £32,044,000 for the salaries and expenses of the Ministry of Pensions, &c., Mr. Whitley in the chair.

Mr. HOGGE, referring to the transference to the Ministry of Pensions of the National Service Medical Boards, said he remembered these boards more in sorrow than in anger. As a matter of fact, they provided the Minister of Pensions with more pension cases than he probably cared to think of. He was sure that the right honourable gentleman agreed with him that these boards sent into the army men who were unfit to serve, and who therefore became eligible for pensions much sooner than if the boards had done their duty to the country. Personally he felt that these boards were in most cases a gross scandal, and it was true to say that the National Service Department had contributed more to the necessity for this vast sum of money which they were voting than any other single organisation in the country. He thought it would have been better for the Minister of Pensions to have pensioned these boards. If their abilities to assess a man who was disabled were about as good as their abilities to consider a man's fitness to go into the army, then he had nothing more or less than the highest contempt for their particular rôle.

Major MOLSON endorsed what had been said about medical boards. He was personally acquainted with the work of the boards as he was a medical officer during the war and was on a medical board. He strongly urged on the Minister of Pensions that a great deal more attention should be paid to the staffs appointed to medical boards, and more especially to the presidents. He knew personally of very bad cases of men sent into the army who ought not to have been sent at all. Only recently he had had cases brought to his notice in which medical boards overlooked serious trouble. If a board had very much work to do it passed over the cases rather quickly and simply took a man's statement.

Sir L. WORTHINGTON-EVANS, the Minister of Pensions, said he could not assent to Mr. Hogge's criticism of the National Service Medical Boards during war time. He could not agree with him in calling them a scandal. Mr. Hogge forgot that at that time it was necessary to get every man into the army who could be of service to it. The army was not confined to A 1 men and it was not just because men who were not A 1 men went into the army to blame the boards. It was not their fault; it was a question of policy, which had been debated in the House over and over again and he did not propose further to refer to it. The Pension Medical Boards were not permanent. With regard to the remarks of Major Molson, now that the Pensions Ministry had at their command the services of so many medical men who had been overseas they were taking full advantage of them throughout the medical service both on the boards and as medical referees. Preference was being given to the medical men who served overseas, and subject to that, a preference was given to those who served in hospitals at home. In that way they were getting medical officers who were experienced in the actual work with the men in the fighting zone. He believed they were getting a sympathetic board competent to do the work entrusted to it.

The vote was agreed to.

WEDNESDAY, DEC. 10TH.

New Medical Benefit Regulations.

Lieutenant-Colonel CLAUDE LOWTHER asked the Minister of Health in what way the Medical Benefit Regulations for 1920 were intended to give an efficient medical service to the insured population; and whether his Department had considered the effect of restricting the freedom of the panel practitioner upon the production of a more efficient service.—Dr. ADDISON replied: The limits of an answer to a question do not permit of the various ways being set forth in which it is confidently believed that the new Regulations will fulfil the object with which they were framed of improving the efficiency of the insurance medical service. In answer to the second paragraph of the question, I would say that the general approval of the Regulations recently expressed by the conference of panel committees in a resolution, to which there were only three dissentients out of 147 representatives present, affords evidence that this result has been attained without undue restriction on the freedom of the insurance practitioner.

Colonial Officers and Venereal Disease.

Mr. HOGGE asked the Secretary for War whether colonials serving as officers in the Royal Air Force who were suffering from venereal disease must, under a recent Air Force order, at the expiration of three months be discharged from hospital, cured or uncured, or forfeit repatriation and pay.—CAPTAIN GUEST (Joint Patronage Secretary to the Treasury) replied: The rule is that such officers are not discharged from hospital until fit for discharge, nor do they forfeit repatriation, but their pay ceases if they continue incapacitated for duty for three months.

THURSDAY, DEC. 11TH.

Measles Notification.

Dr. M'DONALD asked the Minister of Health if he would reconsider his decision to abolish compulsory notification of measles in consideration of the fact that the nation had not yet fully recognised the grave complications resulting from this malady.—Dr. ADDISON replied: The effect of the recent Circular and Order of the Ministry to which the question refers is not quite that which is stated in the question. Any local authority which thinks it expedient and makes effective provision to meet the circumstances can continue or adopt the notification referred to; but experience has shown that a universally enforced arrangement does not have any sufficiently beneficial results in the absence of such provision to justify the great expense entailed. The change was adopted after full consideration and consultation with persons of wide experience of the problem, and I am satisfied that the steps indicated in the circular will be more effective for the purpose which the honourable Member, like the Ministry, has in view than the alternative which he suggests.

The State and the Public Hospitals.

Brigadier-General COLVIN asked the Minister of Health whether His Majesty's Government intended to take over the maintenance and administration of public hospitals; and whether, in the event of their doing so, cottage hospitals would be excluded.—Dr. ADDISON replied: The answer to both parts of the question is in the negative.

National League of the Blind.

Lieutenant-Colonel ARTHUR MURRAY asked the Minister of Health whether his attention had been drawn to the recent activities of the National League of the Blind, and the dissatisfaction existing with regard to the present grant in aid of the blind; whether he had received resolutions requesting early legislation on behalf of the blind; and what the proposals of His Majesty's Government were in the matter.—Dr. ADDISON replied: I am aware of the

activities of the National League of the Blind referred to, and have received numerous resolutions as stated. As previously indicated to the House, the Goverment intend at an early date to introduce legislation, which will, amongst other things, include provisions for the amelioration of the condition of the blind; and I am in consultation with the Advisory Committee on the Welfare of the Blind, on which are representatives of the National League of the Blind, with regard to such provisions.

Lieutenant-Colonel MURRAY: Can the right honourable gentleman say that this legislation will be introduced at an early date next session?—Dr. ADDISON: I hope so.

Prudential Benefit Claims.

Brigadier-General CROFT asked the Minister of Health whether complaints were being received regarding approved societies worked by the Prudential Insurance Company; whether undue delay involving weeks, or even months, took place in settling claims for maternity and sickness benefit; and what machinery existed to prevent such delay in settlement of claims.—Dr. ADDISON replied: I have no reason to think that there is any unreasonable delay on the part of these societies in the settlement of claims for benefit, though from time to time cases occur in which some delay is inevitable owing to special difficulties in establishing the particular member's title to benefit. If the honourable and gallant Member can furnish me with particulars of any cases in which there appears to have been undue delay I will have them investigated.

MONDAY, DEC. 15TH.

Health Orders in Council.

Sir JOHN HARMOOD-BANNER asked the Minister of Health if he would state the date and short effect of all Orders in Council made under Section 11 of the Ministry of Health Act, 1919, appointing the days for the provisions of the Act to come into operation and of all the Orders in Council made under Section 3 of the Act transferring functions to or from the Minister.—Dr. ADDISON replied: Three Orders have been made under Section 11 dated June 25th, Sept. 22nd, and Nov. 25th. The effect of these Orders is that the whole of the Act has now been brought into operation except proviso (1) to Subsection (1) of Section 3 dealing with medical research; the date on which it is proposed to bring this into operation is not yet decided. No Orders have been made under Section 3. Three draft Orders have been laid before the House, but they cannot now be actually made till next session.

Remuneration of Medical Officers in V.A.D. Hospitals.

On a vote of £5,000,000 for Army Services,

Mr. WATERSON raised the question of the remuneration of medical officers in Voluntary Aid Hospitals, and protested against the latter part of the confidential circular which was issued stating that "it is not intended that payment should be made unless it is asked for, and hospitals should not be informed of this authority." That, he said, was not a nice circular for the War Office to issue. They thought it right and honourable that these gentlemen should be paid, but the men concerned must not be acquainted with that fact, as the circular was to be treated as confidential. In some cases men had lost a very great deal, and made application under this circular without effect. Was the Secretary for War prepared to honour such applications now? Some applications had been honoured and in a certain area more than £1000 had been distributed amongst the medical profession. Other districts had been ignored.

Sir D. MACLEAN said he trusted that the case that the honourable gentleman had just put forward was not typical of what was being done in respect of the medical profession. He was sure the appeal which the honourable member made would receive sympathetic consideration from the Secretary for War.

Mr. CHURCHILL, in reply, said he would suggest that Mr. Waterson should allow him to put him into contact with the responsible officials dealing with this matter and then let him have a report as to what were the outstanding points of difference.

The vote was agreed to.

TUESDAY, DEC. 16TH.

Release of Medical Officers in Egypt.

Major MOLSON asked the Secretary for War if he would state what were the numbers of Territorial Force and temporary commissioned medical officers with over three years' war service compulsorily retained in the Egyptian Expeditionary Force; and whether he could give any hope of early demobilisation to these medical officers, as they were suffering serious hardship by being away from their practices and families.—Mr. CHURCHILL replied: I regret that the information asked for in the first part of the question is not available. It could not be obtained without much labour and research involving reference to Egypt, and, if obtained, it would not be reliable, as the numbers are changing from day to day. With regard to the last part of the question, I can only say that every regular officer of the Royal Army Medical Corps who can be spared has already been sent out in relief of the Special Reserve. Territorial Force and temporary officers who wish to be released and further officers of these categories are being sent home as establishments are reduced.

Medical Service in the Air Force.

On a vote of £1,020,000 for stores, animal transport, &c., connected with the Air Ministry,

Mr. CHURCHILL said that the apparatus for testing air pilots was being made as perfect as the medical experts could make it. The medical services of the Royal Air Force, even if they should not be a completely separate service from the general medical service of the army, must be a highly specialised branch of that service, because the conditions under which airmen were tested and the temperamental effects produced on both officers and men in the Air Force, especially in time of war, were such as to make it necessary that medical officers should undertake extremely refined and specialised study in regard to those conditions. Therefore he fully recognised that it should be a separate branch of the medical service.

The vote was agreed to.

Communications, Letters, &c., to the Editor have been received from—

A.—Dr. G. A. Auden, Birmingham; Assurance Medical Society, Lond.

B.—Dr. H. P. Bayon, Shenley; Mr. H. H. Bywater, Liverpool; Sir R. Bruce-Porter, K.B.E., C.M.G., Lond.; Dr. J. Blomfield, O.B.E., Lond.; Dr. A. E. Boycott, Radlett; Dr. J. P. Brennan, Dublin; Mr. E. S. Brentnall, Manchester; Dr. J. D. Benjafield, Lond.; Dr. E. C. Bond, Bournemouth; Dr. N. Bardswell, Lond.; Dr. G. Blacker, Lond.; Mr. H. W. Bayly, Lond.

C.—Dr. E. L. Collis, Cardiff; Mr. J. F. Colyer, Lond.; Dr. C. Coombs, Bristol.

D.—Dr. L. S. Dudgeon, C.M.G., Lond.; Messrs. Davis and Soper, Lond.; Dr. G. Dinolt, Vienna; Lieut.-Col. A. M. Davies, R.A.M.C.; Mr. J. D. Driberg, O.B.E., Lond.

F.—Dr. J. G. Forbes, Redhill; Mr. H. Frankling, Harrogate; Dr. A. S. Fullarton, Glasgow; Faculty of Insurance, Lond., Sec. of; Messrs. H. Frowde and Hodder and Stoughton, Lond.; Messrs. F. H. Faulding and Co., Lond.; Factories, Lond., Chief Inspector of; Rev. W. J. Ferrar, Lond.

G.—German Society for Education to State Citizenship, Berlin; Gaumont Co., Lond.; General Medical Council, Lond., Registrar of.

H.—Mrs. C. F. Hall, Lond.; Dr. Houdart, Bel-Air (Côtes-du-Nord); Mrs. E. Hallock, Lond.; Prof. R. T. Hewlett, Lond.; Mr. F. M. Hughes, Deal; Dr. C. W. Hutt, Dudley; Dr. J. M. Hamill, Lond.; Hoffman-La Roche Chemical Works, Lond.; Dr. C. T. W. Hirsch, Lond.

I.—Insurance Committee for the County of Ayr, Kilmarnock; Institute of Hygiene, Lond., Sec. of.

K.—King Edward's Hospital Fund for London, Hon. Secs. of.

L.—Dr. H. M. Leete, Edinburgh; Labour Co-Partnership Association, Lond.; League of Red Cross Societies, Geneva; Mr. N. C. Lake, Lond.; Mr. R. Lake, Lond.; London Hospital Medical College, Sec. of; Capt. T. S. Law, R.A.M.C.; Dr. C. E. Lakin, Lond.

M.—Dr. R. O. Moon, Lond.; Dr. R. J. Mills, Norwich; Metropolitan Hospital Sunday Fund, Lond., Sec. of; Dr. R. Morton, Lond.; Mr. F. Milton, Coonoor; Dr. A. B. MacLean, Glasgow; Dr. P. Manson-Bahr, D.S.O., Lond.

N.—Mr. H. C. Nance, Wheathampstead; Mr. R. Nairn, Hastings, N.Z.; National Safety Council, Chicago.

P.—Pitman-Moore Co., Zionsville, Indiana; Dr. R. H. Paramore, Rugby.

R.—Dr. R. G. Rows, Lond.; Royal College of Physicians, Edinburgh; Mr. J. E. H. Roberts, O.B.E., Lond.; Royal Medical Benevolent Fund, Lond., Sec. of; Dr. R. R. Rentoul, Liverpool; Dr. J. S. Ross, Edinburgh; Sister M. Randell, Lond.; Dr. R. J. Rowlette, Dublin; Royal Institution of Great Britain, Lond.; Royal Statistical Society, Lond.; Royal Society, Lond.

S.—Col. R. P. Strong, M.C., U.S.A., Geneva; Dr. W. D. D. Small, Edinburgh; Dr. C. Singer, Oxford; Messrs. Straker and Crane, Lond.; Mr. R. M. Spittle, Colombo; Dr. C. W. Saleeby, Lond.; Mr. R. S. Sinclair, Glasgow; Dr. W. B. Sansom, Lond.

T.—Mr. E. T. Thompson, Lond.; Mr. R. Tennent, Glasgow; Dr. L. Thatcher, Edinburgh.

V—Mr. R. M. Vick, Lond.

W.—World Trade Club, San Francisco, President of; Mr. C. M. Wenyon, Lond.; Dr. A. R. Waddell, Cambridge; Mr. H. Williams, Hastings; Dr. F. J. Waldo, Lond.; West London Medico-Chirurgical Society, Hon. Sec. of; Messrs. Watson and Sons, Lond.

Y.—Dr. M. Young, Chester; Mr. M. Yearsley, Lond.

Communications relating to editorial business should be addressed exclusively to the Editor of THE LANCET, 423, Strand, W.C. 2.

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Appointments.

Successful applicants for vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

BARROW, M., has been appointed Medical Officer for the Broadhembury and Plymtree District by the Honiton (Devon) Board of Guardians.

HERBERT, A., L.M.S.S.A. Lond., Medical Officer for the Nether Stowey District.

LOCK, NORMAN F., M.A., M.B., B.Ch., F.R.C.S., Assistant Surgeon to the Royal Devon and Exeter Hospital.

LOWE, A. L., C.B.E., and WALLACE, ALICE L., to be members of the Advisory Committee on the Welfare of the Blind.

TRUMAN, C. A. B., L.R.C.S. Irel., L.R.C.P. Edin., Mental Specialist to the Devon Educational Committee.

Bristol Eye Hospital: STACK, E. H. E., M.B., B.C., F.R.C.S., Honorary Surgeon; ILES, A. E., M.B., B.S., F.R.C.S., Honorary Assistant Surgeon.

King's College Hospital and Medical School: WILTSHIRE, H. W., M.D., F.R.C.P., Physician in Charge of the Cardiological Department, Lecturer on Cardiology, and Vice-Dean of the Medical School; TUNNICLIFFE, F. W., M.D., M.R.C.P., Physician in Charge of the Therapeutics and Applied Pharmacology Department and Lecturer on Therapeutics and Applied Pharmacology; FIRTH, A. C. D., M.D., M.R.C.P., Junior Physician and Demonstrator of Clinical Medicine; STEEN, R. H., M.D., M.R.C.P., Out-patient Physician for Psychological Medicine; WILSON, S. A. K., M.D., F.R.C.P., Junior Neurologist and Lecturer on Neurology; WALKER, J. W. T., M.B., C.M., F.R.C.S., Senior Urologist and Lecturer on Urology; FAIRBANK, H. A. T., M.S., F.R.C.S., Senior Orthopædist and Lecturer on Orthopædics; EVERIDGE, J., F.R.C.S., Junior Urologist and Junior Surgeon and Lecturer on Surgical Applied Anatomy; MARSHALL, C. J., M.D., M.S., F.R.C.S., Junior Orthopædist and Junior Surgeon and Lecturer on Surgical Applied Anatomy; SIMPSON, W. J. R., C.M.G., M.D., F.R.C.P., D.P.H., Lecturer on Tropical Medicine; EMERY, W. D'ESTE, M.D., B.Sc., M.R.C.P., Pathologist, Director of Pathological Department, and Lecturer on General Pathology; CLAYTON, E. B., M.B., B.C., M.R.C.S., Physico-therapist and Director of the Physico-therapeutic Department; MOODY, L. M., M.D., B.S., M.R.C.P., Bacteriologist and Lecturer on Bacteriology; HARRISON, G. A., M.R.C.S., Biochemist and Lecturer on Medical Chemistry; INGLEBY, H., M.B., B.S., M.R.C.P., Pathological Registrar and Lecturer on Morbid Anatomy; BURRIDGE, H. A., M.B., M.R.C.S., Lecturer on Forensic Medicine and Toxicology; SHELDON, J. H., M.B., B.S., M.R.C.S., Sambrooke Medical Registrar and Medical Tutor; WAKELEY, C. P. G., M.R.C.S., Sambrooke Surgical Registrar and Surgical Tutor; MCALLISTER, A. C., M.B., B.S., M.R.C.S., Obstetric Registrar and Obstetric Tutor.

Certifying Surgeons under the Factory and Workshop Acts: O'SULLIVAN, D., F.R.C.S. Irel. (Kinsale); THOMAS, G. M. A., L.R.C.P. & S. Edin., L.F.P.S. Glasg. (Porthcawl).

Vacancies.

For further information refer to the advertisement columns.

Aberdeen Royal Infirmary.—Asst. P.

Beckenham Education Committee.—Sch. Dent. £450.

Bethlem Hospital, New Bridge-street, E.C.—Res. H.P. £25 per qr.

Birmingham and Midland Free Hospital for Sick Children.—Radiographer. £40.

Birmingham City Education Committee.—Asst. Sch. M.O.'s £450.

Blackburn County Borough.—M.O.H.

Bradford City Education Committee.—Two Asst. School Dentists. £500.

Bradford City Infant Clinic.—Female Asst. M.O. £400.

Bristol General Hospital.—Cas. H.S. £175.

Bristol Royal Infirmary.—Hon. Skiagraphist.

British Honduras.—Asst. M.O. $1900.

Burnley County Borough.—Tuber. O. and Director of Municipal Laboratory. £600. Asst. Sch. M.O. £500.

Burton-on-Trent Infirmary.—Res. H.S. £200.

Buxton, Derbyshire, Devonshire Hospital.—Asst. H.P. £120.

Cambridge, Addenbrooke's Hospital.—Hon. Asst. S.

Cardiff, King Edward VII. Welsh National Memorial Association.—Asst. Res. M.O. for South Wales Sanatorium and Asst. Res. M.O. for North Wales Sanatorium. £300.

Chelmsford, Essex Education Committee.—Sch. Med. Inspec. £400.

Cheshire County Asylum, Parkside, Macclesfield.—Jun. Asst. M.O. £350.

Cheshire County Council.—District Tuberculosis Officer. £450.

Colindale Hospital, Hendon, N.W.—Med. Supt. £600.

Darlington General Hospital.—H.S. £250.

Derby, Derbyshire Royal Infirmary.—H.S. £200.

Dorchester, Dorset County Council Education Committee.—School Dentists. £400.

Dudley County Borough Education Committee.—Asst. to Sch. M.O. and M.O.H. £500.

Durham County and Sunderland Eye Infirmary.—H.S. £450.

East African Protectorates.—M.O.'s. £400–£20–£500.

Edinburgh Corporation.—Asst. Clin. M.O. £500.

Gloucestershire Royal Infirmary and Eye Institution.—Ophthal. S.

Grosvenor Hospital, Vincent-square, S.W.—Registrar.

Hospital for Women, Soho-square, W.—Registrar. £31 10*s.*

Hyde Borough.—Female Asst. M.O. £400.

Italian Hospital.—H.S. £150.

Leasowe, Cheshire, Hospital for Children.—Jun. Res. M.O. £150.

London Jewish Hospital, Stepney Green, E.—Sec. Cas. Officer. £50.

London Temperance Hospital, Hampstead-road, N.W.—Hon. Dent.

Manchester Children's Hospital, Gartside-street, Manchester.—Asst. M.O. £200.

Manchester Hospital for Consumption and Diseases of the Throat and Chest, Bowdon, Cheshire.—Res. M.O. £250.

Manchester Hospital for Consumption and Diseases of the Throat and Chest.—Asst. M.O. for Crossley Sanatorium. £250.

Manchester Royal Infirmary.—H.S. to Aural, Gynæc., and Ophth. Depts. £100.

Middlesbrough Education Committee.—Sch. Dent. £400.

National Hospital for the Paralysed and Epileptic, Queen-square, W.C.—H.P. £150.

Newcastle-upon-Tyne, Hospital for Sick Children.—Junior Res. M.O. £200.

Nottingham City Asylum.—Second Asst. M.O. £300.

Nottingham, Coppice Mental Hospital.—Asst. M.O. £300.

Peterborough Infirmary.—H.S. £150.

Plymouth Education Authority.—Asst. Sch. M.O. £400.

Plymouth, Udal Torre Sanatorium, Yelverton.—M.O. £350.

Portsmouth Borough.—Asst. M.O.H. and Chief Tuberc. O. £600.

Queen's Hospital for Children, Hackney-road, Bethnal Green, E.—Dent. Surg. £250. Also H.P. and Cas. H.S. £100.

Royal Free Hospital, Gray's Inn-road, W.C.—Res. Obstet. Officer.

Salford Royal Hospital.—Cas. H.S. £150.

Salop County Council, Medical Inspection of School Children, Maternity and Child Welfare.—Three appointments. £450.

Seamen's Hospital Society, Dreadnought Hospital, Greenwich.—S.

Sheffield Royal Hospital.—Ophth. H.S. £135.

Shoreditch Infirmary, Hoxton-street, N.—M.O. £600.

Singapore, Straits Settlements.—Med. Supt. Infectious Diseases Hospital. $7200 ($840).

South London Hospital for Women, South Side, Clapham Common, S.W.—Female Asst. Path.

Stockport Education Committee.—Dentist.

Straits Settlements.—Professor of Anatomy for Medical Department. $600 a month.

Sunderland Royal Infirmary.—Sen. H.S. £250. Also H.P. £200.

Surrey, Virginia Water, Holloway Sanatorium (Hospital for the Insane).—Female Jun. Asst. M.O. £300.

University of Birmingham, Faculty of Medicine.—Lecturer in Bacteriology. £450.

University of Liverpool.—Lecturer in Pharmacology. £500.

Ventnor, Isle of Wight, Royal National Hospital for Consumption and Diseases of the Chest.—Asst. Res. M.O. £250.

Wakefield, West Riding County Council.—School Oculist. £550.

West-End Hospital for Nervous Diseases, 73, Welbeck-street, W.—P.

West Ham Union Infirmary, Whipps Cross-road, Leytonstone, E.—Res. Asst. M.O. £300.

Worcestershire County Council.—Asst. County M.O. £450.

THE Chief Inspector of Factories, Home Office, S.W., gives notice of vacancies for Certifying Surgeons under the Factory and Workshop Acts at Catrine, Ketton, Market Harborough, Shardlow, and Totnes.

Births, Marriages, and Deaths.

BIRTHS.

BOYS.—On Dec. 13th, at The White House, St. Albans, the wife of Leonard Boys, M.B., B.S., Captain, R.A.M.C. (T.F.), of Woodhall Spa, Lincolnshire, of a son.

EGAN.—On Dec. 5th, at Upper Fitzwilliam-street, Dublin, the wife of Major W. Egan, D.S.O., R.A.M.C., of a daughter.

GABB.—On Dec. 11th, the wife of Harry Gabb, B.A., M.B., B.C., of a son.

HOLMES.—On Dec. 10th, at "Snaresbrook," Mottingham, Eltham, S.E., the wife of R. A. Holmes, M.R.C.S., L.R.C.P., of a daughter.

HURTER.—On Dec. 9th, at Grassendale, Liverpool, the wife of Herbert R. Hurter, M.D., of a daughter.

KEIR.—On Dec. 4th, at Beauacre, Melksham, Wilts, the wife of Ivan C. Keir, M.D., of a son.

KENNEDY.—On Dec. 12th, at Crescent Villas, Plymouth, the wife of C. M. Kennedy, F.R.C.S., of a son.

PHILLIPS.—On Dec. 13th, at Bloomfield, Caterham Valley, the wife of P. G. Phillips, L.R.C.S., L.R.C.P., of a daughter.

MARRIAGES.

BRAIMBRIDGE—SOUTHWELL.—On Dec. 2nd, at Baxter Church, Kidderminster, by the father of the bridegroom, Captain C. V. Braimbridge, R.A.M.C., to Janè Murray, daughter of Mr. and Mrs. E. Southwell, of Mazoe, Southern Rhodesia.

FEILING—HAWKINS.—On Dec. 10th, at Holy Trinity Church, Brompton-road, Anthony Feiling, M.D., M.R.C.P., to Helen Hope, only daughter of Geoffrey Grahame and Inga Hawkins.

ISAAC—WILLIAMS.—On Nov. 26th, at All Souls' Church, Langham-place, London, W., by the Rev. Prebendary Webster, M.A., Major C. Leonard Isaac, B.A., M.B. Cantab., F.R.C.S.E., to Dorothy Margaret, elder daughter of Mr. and Mrs. Fred. Williams, Sunnyside, Gnoll Park-road, Neath.

SEAR—VOSS.—On Sept. 3rd, at St. Paul's Cathedral, Rockhampton, Herbert Roy Sear, M.B., Ch.M., to Dorothy Muriel Voss, M.B., Ch.M., eldest daughter of Dr. F. H. V. Voss and Mrs. Voss, of Rockhampton, Queensland.

THOMSON—BATSON.—On Dec. 11th, at Christ Church, Mayfair, Wm. Brown Thomson, M.D., to Ethel Amelia Batson, youngest daughter of the late Cornelius Batson, Sherborne, Dorset.

WILLMORE—SKINNER.—On Dec. 9th, at Egdean Parish Church, James Graham Willmore, M.R.C.S. Eng., L.R.C.P. Lond., to Mary Dorothy Dury Skinner, daughter of the late Colonel T. H. Skinner, King's Liverpool Regiment, and of Mrs. E. C. Deering of Gorehill, Petworth.

DEATHS.

GROSE.—On Dec. 12th, at Teign View, Bishop's Teignton, Samuel Grose, M.D., F.R.C.S., Staff-Surgeon, R.N., retired.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

SYNTHETIC DRUGS.

Abstracts of Second and Third Cantor Lectures, delivered at the Royal Society of Arts.

By Professor J. T. HEWITT, F.R.S.

II.

The Aromatic Series.

In his second lecture Professor Hewitt commenced with a detailed account of the members of that great family of synthetic drugs belonging to the aromatic series. Phenol and its derivatives were first considered, the lecturer remarking that these are largely used as antiseptics and disinfectants, whilst salicylic acid and its compounds are used extensively in the treatment of rheumatic affections. Phenol, as is well known, is a constituent of coal tar, but it is interesting to learn that during the last few years it has been synthetically prepared, on an important scale, from benzene for the production of picric acid explosives. This achievement is of importance considering the number of synthetic drugs of which benzene and phenol are the parents. The chief derivatives (esters and halogen compounds) were then mentioned, including, amongst others, guaiacol, resorcin, pyrogallol, and phenolphthalein (purgen). Next was described, as the most important of the group of phenol-carbocylic acids, salicylic acid, and the methods of production were given. Aspirin (aceto-salicylic acid) falls into this category, and salicylic compounds used externally, such as mesotan. The aromatic amines and their derivatives include phenacetin, antifebrin, and other related compounds. The lecturer referred to the distinct effect in lowering the temperature of the body shown by aniline and homologous amines, but unless their composition is modified they prove toxic. The motor centres of the mid-brain are paralysed and vertigo results, and in addition the hæmoglobin is attacked. By acetylating the aromatic amines, substances are obtained which are more resistant in the circulation, but which still possess antipyretic properties. The observation that acetanilide is oxidised in the body and hydroxyl introduced in the para-position, and that para-aminophenol, whilst a strong antipyretic, is much less toxic than aniline, points to the use of this substance protected in such a way as not to attack the red blood corpuscles. Acetylation effects this protection, but even better results are obtained if the hydroxyl group is ethylated. Phenacetin is the result. Coming to the aromatic acids, it was pointed out that many derivatives of benzoic acid and amino-alcohols have been introduced as local anæsthetics. We may, in a sense, the lecturer continued, include cocaine as a synthetic drug; ecgonine can be produced which, when methylated and benzoylated, yields cocaine. It is desirable, however, that a local antiseptic should stand boiling in solution, under which condition cocaine is apt to hydrolyse and its toxicity and irritant action are also against it. Some of the synthetic drugs, with constitutions resembling that of cocaine, are more reliable in these respects—alpha- and beta-eucaine form examples. The benzoylating of open chain amino-alcohols, again, produced stovaine and novocaine.

The Quinoline and Acridine Series.

Passing over the quinoline group—a nucleus of quinine itself—the members of which have little medical interest except, perhaps, atophan, which is said to promote the secretion of uric acid, Professor Hewitt next referred to the acridine derivatives, which include the trypanocides, trypaflavine, flavine, acriflavine, and proflavine. The steps in the preparation were illustrated in the closed-chain diagrams. Most antiseptics, it was pointed out, act more powerfully in water than in blood, but the reverse holds for flavine, *Staphylococcus aureus* being killed at a dilution of 1 in 20,000 of water containing 0·7 per cent. of peptone, but at 1 in 200,000 in blood serum. For *Bacillus coli* the respective figures are 1 : 1300 and 1 : 100,000. Flavine has, moreover, a low toxicity. The lecture concluded with a description of the pyrazolone derivatives, of which the most important is phenazone or antipyrin, the synthetic formation of which was illustrated. The group includes pyramidone, the physiological action of which resembles that of antipyrine, but it is three times as powerful, while its action develops more slowly and lasts longer.

III.

Alkaloids.

The constitution of the alkaloids formed the opening subject of the third and final lecture. The valuable therapeutic properties, Professor Hewitt remarked, of many alkaloids rendered them indispensable, since in many cases no suitable synthetic substitutes have been prepared. Thus the desirable properties of quinine and morphine are not found fully associated with any artificial drug. Such natural compounds remain essential, though they may have drawbacks as well as advantages. And it is a matter for the chemist, the lecturer said, to make derivatives eliminating the disadvantages whilst preserving the valuable properties. A few examples were then given of modified alkaloids in regard to the methods adopted in making constitutional variations. Tasteless quinine compounds were cited, and more particularly that known as euquinine (quinine-ethyl-carbonate) and hydroquinine, a reduction compound with a trypanocidal action said to be superior to quinine itself. The modifications of morphine were next referred to—for example, dionine, peronine, diamorphine (heroin), and apomorphine. Before leaving alkaloidal substances mention was made of adrenalin, the basic substance which is the active principle of the suprarenal gland. Compounds allied to it have been synthesised, having much the same action as adrenalin.

Organo-metallic Compounds.

Metallic salts of organic acids, said Professor Hewitt, are largely employed in medicine, frequently with the object of combining the specific actions of the base and acid. But there is, he added, a further class of compounds in which metal is directly combined with carbon, and these compounds are frequently of very considerable use. The organo-metallic derivatives were then described, including the colloidal preparations and their proprietary names were given. It was shown how the metals could be made to enter into organic combination, the best examples of which, from a medical point of view, are probably silver, mercury, bismuth, and arsenic. The group discussed naturally included the salvarsans, and their constitution and formation were outlined.

Professor Hewitt in these lectures gave the most complete survey of synthetic drugs which we know of, and much time and labour must have been spent in the exact and copious references to the literature of the many substances described.

PUBLIC HEALTH IN NEW SOUTH WALES.

The report of the Director-General of Public Health, Dr. Robert T. Paton, for 1917 (Sydney: W. A. Gullick, Government Printer, 1919) is divided into five parts, dealing with (1) general matters of administration throughout the State; (2) special reports on the Metropolitan and adjacent sanitary districts; (3) an account of an outbreak of mild small-pox; (4) hospital reports; and (5) laboratory reports. In an introductory letter to the Minister of Public Health, Dr. Paton draws attention to the need for legislation to give the Board of Health increased powers and greater elasticity of administration. This body should have power to advise the proclamation of any illness as a "dangerous, infectious, or contagious disease," with consequent authority for compulsory removal to and detention in hospital of such cases; the examination and control of carriers; powers for the destruction of disease-carrying animals—e.g., the snail in bilharziosis, hookworm disease, &c. With regard to venereal affections, a considerable advance was made at the Sydney Hospital by the opening of a night clinic in April to relieve pressure at the Royal Prince Alfred Hospital, where a similar mode of treatment had proved to be of very great service, nearly 800 male patients having been treated there in 1916. During 1917 there were 1413 cases treated (outdoor) at the night clinics, the total number of attendances being 16,777. There was less prevalence of notifiable infectious disease generally in 1917 than in recent years. This applies especially to typhoid and scarlet fevers, from which the deaths were only 103 and 27 respectively for the whole State. Diphtheria was still prevalent. There were more notifications of this one disease than of all the other infections or contagious diseases reported on, taken together. The diphtheria cases numbered 5805, with 247 deaths. It has been prevalent since 1903, and since 1910 has been much the most prevalent of the zymotic group; also, with the exception of tuberculosis in the last two years, much the most fatal. Of typhoid and scarlet fevers, infantile paralysis, malaria, cerebro-spinal meningitis and tuberculosis, there were in all 4695 cases and 829 deaths, 584 of these being from tuberculosis and 103 from typhoid.

Appended to the Director-General's report is the Eighth Report of the Government Bureau of Microbiology for 1917. The greater part of this is concerned with the outbreaks of acute polio-encephalo-myelitis, or "X disease," that have occurred in New South Wales (also in Victoria, Brisbane, and Western Queensland) in 1917 and 1918. In the former year the cases mostly occurred in March and April, disappearing during May. Cases again occurred from January to April, 1918, being most numerous in February and March. Convulsions, rigidity, coma, and fever were the chief symptoms; the characteristic pathological condition was the presence of "cellular sheaths, often marked, round the veins in various parts of the central nervous system. These occur not only in the grey matter, but also to a less extent in the

white matter, and in the pia mater." There was no prevalence of ordinary acute poliomyelitis (infantile paralysis) in New South Wales generally, nor in the districts affected. "The disease is a distinct entity. The virus responsible for it is evidently closely related to that causing ordinary acute poliomyelitis, but is either specifically distinct or a more recent irritant breeding true." Full details of the clinical and pathological conditions are given, with some very finely reproduced coloured illustrations, the whole report being an important original research in pathology and preventive medicine. It is the work of Dr. J. Burton Cleland, principal microbiologist, assisted by Dr. Alfred W. Campbell and Dr. Burton Bradley.

PUBLIC HEALTH IN SOMALILAND.

No reliable information is available as to the Somali population, but 300,000 is generally quoted as an approximate figure. It is estimated that the Berbera population varies from 10,000 in the hot weather (May to September) to 25,000 or 30,000 in the trading season. Bulhar has a somewhat smaller floating population, while Zeyla varies from 5000 in the hot weather to 7000 during the cooler season. A census of the alien community, excluding Europeans, was taken in the three coast towns in 1911, the return then being as follows: Indian, 741; Arabs, 1857; and mixed population, 798. The general public health during 1917–18 was satisfactory, and the amount of sickness appears to have been much the same as in the previous year. A wave of malignant malaria seemed to pass over the whole Protectorate from March to June, 1917. The cases seen were all of the subtertian type, with cerebral and sometimes intestinal symptoms. Very few of the tribespeople have recourse to the Government hospitals until they are *in extremis*, believing that recovery or death is determined by fate alone; and consequently this outbreak of malaria resulted in many deaths among the native population, despite the efforts of the medical staff, who sought out the sick in the towns and treated them with quinine. Relapsing fever was more prevalent than usual in the Hargeisa district, where the *Ornithodorus moubata* tick is found. The natives believe the Congo floor-maggot (i.e., the larva of the *Auchmeromyia luteola*, which is common at Hargeisa but is seen nowhere else in the Protectorate) is the causative agent; and this seems quite possible, although the medical authorities have not yet been able to satisfy themselves that this maggot can transmit the spirillum. An intramuscular injection of salvarsan or an intravenous injection of galyl seemed to be efficacious in all cases so treated, and to prevent a further relapse. The prevalent diseases are tuberculosis, venereal diseases, chronic rheumatism, bronchitis, conjunctivitis, and ulcers. Scurvy is very much on the decrease, but in 1917 there was an outbreak of this disease among a detachment of Indian troops at Las Khorai, one death resulting. In Somaliland it is found that milk, especially camel's milk, is a good antiscorbutic, but lime-juice has not proved of much service. From April to July, 1917, plague was prevalent in Aden, but, thanks to the preventive measures taken by the Medical Department, the disease did not spread to Somaliland. Many useful sanitary measures have been taken in Berbera, and mosquitoes, which usually abound from November to June, were scarcely noticeable during 1917–18. In 1917 526 patients were admitted to the Berbera Hospital and 5927 out-patients were treated in the dispensary. The number of patients treated in other hospitals of the Protectorate were: Bulhar, 2647; Zeyla, 3580; Burao, 2095; Hargeisa, 2892; Las Durch, 1417; and Las Khorai, 734. The total number of deaths reported from all Protectorate hospitals was 59. Camp hospitals, consisting of mat huts erected on wooden framework, are in use in each of the coast towns as isolation hospitals.

GOVERNMENT EMPLOYEES AND THE FINE ARTS.

IT must not be supposed that the exclusion of the public during the last three years from many of the museums and picture galleries of the metropolis has been unattended with compensations. It cannot be doubted that the civil servants who have frequented them will take back to their more formal environment a wider culture and a juster appreciation of beauty wherever it may be found. 781 members of the staff of the Pensions Ministry are still in the National Gallery of British Art; the National Gallery itself has 250 workers from the Ministry of Munitions; 1290 War Office employees enjoy the wider atmosphere of the Imperial Institute; the Victoria and Albert Museum impresses its treasures yet upon 729 officials of the Board of Education; 193 servants of the War Office Medical Research Department still have the British Museum to stimulate their imagination. Sir Alfred Mond told the House of Commons on Monday that these 3243 happy people were being banished from their Olympian homes in the course of the next few weeks. The careful student of blue-books and official correspondence should be able to trace therein the effect of a brief contact with the greatest treasures of humanity on the bureaucratic mind.

ST. DUNSTAN'S HOSPITAL.

To the Editor of THE LANCET.

SIR,—You will, I am sure, favour me with space sufficient to thank the large hearts who, through my hands, have contributed to the above fund, and to say to those my appeal has failed to reach that I will promptly despatch to them such quantities of our special adhesive St. Dunstan's Fair stamps in sheets of 72 as they will retain or can dispose of. The cause is the after-care of the men who have been blinded in the defence of the Empire, and each and all of us, great and small, should endeavour to place St. Dunstan's Hospital on a firm and permanent basis, a worthy aim of Sir Arthur Pearson and his coadjutors in a truly noble work.

Let me also add a hope that there will be a quick response, as I am anxious to considerably augment the fund before the close of the present year. Proceeds of collecting boxes, &c., which are ready for transmission will be warmly welcomed. I am, Sir, yours faithfully,

C. E. TOWN,
Hon. Asst. Organising Secretary.

City Office of St. Dunstan's Hospital, 13, Walbrook, n/r Mansion House, London, E.C. 4, Dec. 11th, 1919.

THE MENTAL AFTER-CARE ASSOCIATION.

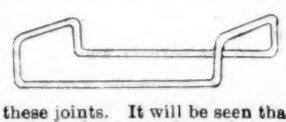
THE Mental After-Care Association for poor persons convalescent or recovered from institutions for the insane has issued an appeal for help to continue and extend the work. This is the only association of the kind in Great Britain, and cases are assisted from all parts of the country. During the past year about 700 people have been helped by sending them to convalescent homes at the seaside or in the country, by gifts of clothing or tools, or by finding work for them. Further particulars will be given and contributions gratefully received by the secretary, Miss Vickers, Church House, Dean's Yard, Westminster, S.W. 1. Bankers, National Provincial and Union, Limited, 117, Victoria-street, S.W. 1.

A CONVENIENT DESK DIARY.

WE have received a specimen of Pettitt's Folio Diary, 1920 (Straker and Crane, 4, Bishopsgate-avenue, London, E.C., price 15*s.* interleaved with blotting paper, or otherwise). The diary is arranged on the plan of a page to a day, the time of the day, from 9 to 6 in half-hours, being printed down the left-hand side of each page, thus making the diary a convenient appointment book. Space is provided for a cash account, and the usual information in regard to stamp duties, customs tariffs, postal regulations, and so forth is given.

A SIMPLE METHOD OF DEALING WITH FRACTURE OF A METACARPAL BONE.

FRACTURE of a metacarpal bone is perhaps in itself not a very great matter, but, inasmuch as the method described below provides a simple and effective way of dealing with it, it may be of interest to record it. The injured hand is placed palm down on the cradle (see figure) so that the metacarpo-phalangeal row of finger-joints falls in the line of its long axis. A bandage, run through the ends of the cradle, is tied over the knuckles to fix it and to prevent undue flexion at these joints. It will be seen that all the joints of the wrist and hand—except four of the metacarpo-phalangeal row—are free, but a successful result depends less upon this fact than upon the patient's appreciation of it; the primary importance of voluntary movement through the maximum range at all the joints of the limb should therefore be explained to him at the outset, and the performance of these with the eyes shut supervised daily until the danger of the development of a disability has passed.



F. A. HORT, M.D., M.R.C.S., L.R.C.P.

Bessborough-gardens, S.W.

CENTRAL ASSOCIATION FOR THE CARE OF THE MENTALLY DEFECTIVE.

COMMENCING on Jan. 20th and ending on March 16th, a course of lectures on Mental Deficiency and the Care of Defectives will be given on successive Tuesdays, at 5.30 P.M., in the Fabian Hall, 25, Tothill-street, Westminster, by Dr. Letitia Fairfield, Mr. Kenneth Richmond, and Miss Lucy Fildes, holder of the Board of Control Research Studentship at the Psychological Laboratory, Cambridge. The lectures, which are intended for public health visitors, infant-welfare workers, teachers, and those engaged in the care and training of defectives and social workers, deal with the types and varieties of mental deficiency and its diagnosis and physical training and the psychological study of the individual. The fee for the nine lectures is 17*s.*, or 2*s.* for a single lecture. Further particulars may be obtained from the Honorary Secretary, Queen Anne's Chambers, Tothill-street, Westminster, London, S.W. 1. It is also announced that the first number of "Studies in Mental Inefficiency," a new quarterly, will be ready in January, 1920.